UNCLASSIFIED

Department of Defense
Fiscal Year (FY) 2021 Budget Estimates

February 2020

Navy

Justification Book Volume 2 of 5

Other Procurement, Navy

BA 02

UNCLASSIFIED

The estimated cost of this report for the Department of the Navy (DON) is $118,619.

The estimated total cost for supporting the DON budget justification material is approximately $2,970,459 for the 2020 fiscal year. This includes $82,977 in supplies and $2,887,482 in labor.

Table of Volumes

Navy..... **Volume 1**

Navy..... **Volume 2**

Navy..... **Volume 3**

Navy..... **Volume 4**

Navy..... **Volume 5**

THIS PAGE INTENTIONALLY LEFT BLANK

Volume 2 Table of Contents

Introduction and Explanation of Contents.....Volume 2 - v

Comptroller Exhibit P-1.....Volume 2 - vii

Master Line Item Table of Contents (by Appropriation then Line Number).....Volume 2 - xlvii

Master Line Item Table of Contents (Alphabetically by Line Item Title).....Volume 2 - lvii

Exhibit P-40s.....Volume 2 - 1

THIS PAGE INTENTIONALLY LEFT BLANK

Other Procurement, Navy

For procurement, production, and modernization of support equipment and materials not otherwise provided for, Navy ordnance (except ordnance for new aircraft, new ships, and ships authorized for conversion); the purchase of passenger motor vehicles for replacement only; expansion of public and private plants, including the land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, $11,292,044,000, to remain available for obligation until September 30, 2023.

FY 2021 Overseas Contingency Operations funding can be separated into the following categories:

- OCO for Direct War Costs ($130,526,000): Direct War costs are those combat or direct combat support costs that will not continue to be expended once combat operations end at major contingency locations.
- OCO for Enduring Requirements ($213,000,000): OCO for Enduring Requirements are enduring in-theater and in-CONUS costs that will likely remain after combat operations cease, and have previously been funded in OCO.

THIS PAGE INTENTIONALLY LEFT BLANK

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
Other Procurement, Navy	9,350,479	10,075,257	75,015	351,250
Total Department of the Navy	9,350,479	10,075,257	75,015	351,250

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
Other Procurement, Navy	10,501,522	10,948,518		343,526
Total Department of the Navy	10,501,522	10,948,518		343,526

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
Other Procurement, Navy	343,526	11,292,044
Total Department of the Navy	343,526	11,292,044

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
01. Ships Support Equipment	3,040,114	3,592,390		5,800
02. Communications & Electronics Equip	3,163,993	3,051,805		310,503
03. Aviation Support Equipment	536,637	666,577	39,295	16,830
04. Ordnance Support Equipment	1,005,000	1,042,658		9,007
05. Civil Engineering Support Equip	129,266	157,880		1,316
06. Supply Support Equipment	604,256	639,641		610
07. Personnel & Command Support Equip	564,711	582,715	35,720	7,184
08. Spares and Repair Parts	306,502	341,591		
Total Other Procurement, Navy	9,350,479	10,075,257	75,015	351,250

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
01. Ships Support Equipment	3,598,190	3,994,366		22,050
02. Communications & Electronics Equip	3,362,308	3,323,695		213,000
03. Aviation Support Equipment	722,702	673,367		86,413
04. Ordnance Support Equipment	1,051,665	1,172,843		2,124
05. Civil Engineering Support Equip	159,196	149,717		1,394
06. Supply Support Equipment	640,251	693,288		520
07. Personnel & Command Support Equip	625,619	567,047		18,025
08. Spares and Repair Parts	341,591	374,195		
Total Other Procurement, Navy	10,501,522	10,948,518		343,526

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
01. Ships Support Equipment	22,050	4,016,416
02. Communications & Electronics Equip	213,000	3,536,695
03. Aviation Support Equipment	86,413	759,780
04. Ordnance Support Equipment	2,124	1,174,967
05. Civil Engineering Support Equip	1,394	151,111
06. Supply Support Equipment	520	693,808
07. Personnel & Command Support Equip	18,025	585,072
08. Spares and Repair Parts		374,195
Total Other Procurement, Navy	343,526	11,292,044

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
	Budget Activity 01: Ships Support Equipment										
	Ship Propulsion Equipment										
1	Surface Power Equipment	A		19,196		14,490					U
	Generators										
2	Surface Combatant HM&E	A		23,495		66,561					U
	Navigation Equipment										
3	Other Navigation Equipment	A		70,270		72,744					U
	Other Shipboard Equipment										
4	Sub Periscope, Imaging and Supt Equip Prog	A		179,293		160,803					U
5	DDG Mod	A		452,908		564,966					U
6	Firefighting Equipment	A		28,143		17,547					U
7	Command and Control Switchboard	A		2,248		2,086					U
8	LHA/LHD Midlife	A		31,453		79,563					U
9	Pollution Control Equipment	B		20,883		21,820					U
10	Submarine Support Equipment	A		37,155		44,895					U
11	Virginia Class Support Equipment	A		66,328		28,465					U
12	LCS Class Support Equipment			38,701		23,426					U
13	Submarine Batteries			24,460		22,690					U
14	LPD Class Support Equipment			55,726		46,945					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
Budget Activity 01: Ships Support Equipment											
	Ship Propulsion Equipment										
1	Surface Power Equipment	A		14,490		11,738					U
	Generators										
2	Surface Combatant HM&E	A		66,561		58,497					U
	Navigation Equipment										
3	Other Navigation Equipment	A		72,744		74,084					U
	Other Shipboard Equipment										
4	Sub Periscope, Imaging and Supt Equip Prog	A		160,803		204,806					U
5	DDG Mod	A		564,966		547,569					U
6	Firefighting Equipment	A		17,547		18,394					U
7	Command and Control Switchboard	A		2,086		2,374					U
8	LHA/LHD Midlife	A		79,563		78,265					U
9	Pollution Control Equipment	B		21,820		23,035					U
10	Submarine Support Equipment	A		44,895		64,632					U
11	Virginia Class Support Equipment	A		28,465		22,868					U
12	LCS Class Support Equipment			23,426		3,976					U
13	Submarine Batteries			22,690		31,322					U
14	LPD Class Support Equipment			46,945		50,475					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
Budget Activity 01: Ships Support Equipment							
	Ship Propulsion Equipment						
1	Surface Power Equipment	A				11,738	U
	Generators						
2	Surface Combatant HM&E	A				58,497	U
	Navigation Equipment						
3	Other Navigation Equipment	A				74,084	U
	Other Shipboard Equipment						
4	Sub Periscope, Imaging and Supt Equip Prog	A				204,806	U
5	DDG Mod	A				547,569	U
6	Firefighting Equipment	A				18,394	U
7	Command and Control Switchboard	A				2,374	U
8	LHA/LHD Midlife	A				78,265	U
9	Pollution Control Equipment	B				23,035	U
10	Submarine Support Equipment	A				64,632	U
11	Virginia Class Support Equipment	A				22,868	U
12	LCS Class Support Equipment					3,976	U
13	Submarine Batteries					31,322	U
14	LPD Class Support Equipment					50,475	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
15	DDG 1000 Class Support Equipment	A		57,700		8,530					U
16	Strategic Platform Support Equip	A		22,254		14,331					U
17	DSSP Equipment	A		3,629		2,909					U
18	CG Modernization	A		268,509		193,990					U
19	LCAC	A		3,709		3,392					U
20	Underwater EOD Equipment			82,200		71,240				5,800	U
21	Items Less Than $5 Million	A		122,985		87,857					U
22	Chemical Warfare Detectors	A		2,966		2,961					U
23	Submarine Life Support System	A		6,924		6,635					U
	Reactor Plant Equipment										
24	Ship Maintenance, Repair and Modernization	A				1,000,000					U
25	Reactor Power Units	A		346,325		5,340					U
26	Reactor Components	A		496,439		452,692					U
	Ocean Engineering										
27	Diving and Salvage Equipment	A		10,706		11,854					U
	Small Boats										
28	Standard Boats	A		68,607		67,102					U
	Production Facilities Equipment										
29	Operating Forces Ipe	A		284,429		202,238					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
15	DDG 1000 Class Support Equipment	A		8,530		42,279					U
16	Strategic Platform Support Equip	A		14,331		15,429					U
17	DSSP Equipment	A		2,909		2,918					U
18	CG Modernization	A		193,990		87,978					U
19	LCAC	A		3,392		9,366					U
20	Underwater EOD Equipment			77,040		16,842					U
21	Items Less Than $5 Million	A		87,857		105,715					U
22	Chemical Warfare Detectors	A		2,961		3,044					U
23	Submarine Life Support System	A		6,635		5,885					U
	Reactor Plant Equipment										
24	Ship Maintenance, Repair and Modernization	A		1,000,000		1,260,721					U
25	Reactor Power Units	A		5,340		5,305					U
26	Reactor Components	A		452,692		415,404					U
	Ocean Engineering										
27	Diving and Salvage Equipment	A		11,854		11,143					U
	Small Boats										
28	Standard Boats	A		67,102		52,371				19,104	U
	Production Facilities Equipment										
29	Operating Forces Ipe	A		202,238		233,667					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
15	DDG 1000 Class Support Equipment	A				42,279	U
16	Strategic Platform Support Equip	A				15,429	U
17	DSSP Equipment	A				2,918	U
18	CG Modernization	A				87,978	U
19	LCAC	A				9,366	U
20	Underwater EOD Equipment					16,842	U
21	Items Less Than $5 Million	A				105,715	U
22	Chemical Warfare Detectors	A				3,044	U
23	Submarine Life Support System	A				5,885	U
	Reactor Plant Equipment						
24	Ship Maintenance, Repair and Modernization	A				1,260,721	U
25	Reactor Power Units	A				5,305	U
26	Reactor Components	A				415,404	U
	Ocean Engineering						
27	Diving and Salvage Equipment	A				11,143	U
	Small Boats						
28	Standard Boats	A		19,104		71,475	U
	Production Facilities Equipment						
29	Operating Forces Ipe	A				233,667	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
	Other Ship Support										
30	LCS Common Mission Modules Equipment			33,237		38,730					U
31	LCS MCM Mission Modules			98,901		64,789					U
32	LCS ASW Mission Modules					24,617					U
33	LCS SUW Mission Modules			13,025		14,598					U
34	LCS In-Service Modernization	A		62,526		85,714					U
35	Small & Medium UUV	A				25,601					U
	Logistic Support										
36	LSD Midlife & Modernization			4,784		40,269					U
	Total Ships Support Equipment			3,040,114		3,592,390				5,800	
	Budget Activity 02: Communications & Electronics Equip										
	Ship Sonars										
37	SPQ-9B Radar	A		19,179		21,664					U
38	AN/SQQ-89 Surf ASW Combat System	A		114,344		121,966					U
39	SSN Acoustic Equipment	A		331,338		367,620					U
40	Undersea Warfare Support Equipment	A		10,134		8,967					U
	ASW Electronic Equipment										
41	Submarine Acoustic Warfare System	A		21,615		22,331					U
42	SSTD	A		4,777		12,439					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
	Other Ship Support										
30	LCS Common Mission Modules Equipment			38,730		39,714					U
31	LCS MCM Mission Modules			64,789		218,822					U
32	LCS ASW Mission Modules			24,617		61,759					U
33	LCS SUW Mission Modules			14,598		24,412					U
34	LCS In-Service Modernization	A		85,714		121,848					U
35	Small & Medium UUV	A		25,601		67,709				2,946	U
	Logistic Support										
36	LSD Midlife & Modernization			40,269							U
	Total Ships Support Equipment			3,598,190		3,994,366				22,050	
	Budget Activity 02: Communications & Electronics Equip										
	Ship Sonars										
37	SPQ-9B Radar	A		21,664		27,517					U
38	AN/SQQ-89 Surf ASW Combat System	A		121,966		128,664					U
39	SSN Acoustic Equipment	A		367,620		374,737					U
40	Undersea Warfare Support Equipment	A		8,967		9,286					U
	ASW Electronic Equipment										
41	Submarine Acoustic Warfare System	A		22,331		26,066					U
42	SSTD	A		12,439		13,241					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
	Other Ship Support						
30	LCS Common Mission Modules Equipment					39,714	U
31	LCS MCM Mission Modules					218,822	U
32	LCS ASW Mission Modules					61,759	U
33	LCS SUW Mission Modules					24,412	U
34	LCS In-Service Modernization	A				121,848	U
35	Small & Medium UUV	A		2,946		70,655	U
	Logistic Support						
36	LSD Midlife & Modernization						U
	Total Ships Support Equipment			22,050		4,016,416	
	Budget Activity 02: Communications & Electronics Equip						
	Ship Sonars						
37	SPQ-9B Radar	A				27,517	U
38	AN/SQQ-89 Surf ASW Combat System	A				128,664	U
39	SSN Acoustic Equipment	A				374,737	U
40	Undersea Warfare Support Equipment	A				9,286	U
	ASW Electronic Equipment						
41	Submarine Acoustic Warfare System	A				26,066	U
42	SSTD	A				13,241	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
43	Fixed Surveillance System	A		293,731		128,441				310,503	U
44	SURTASS	A		56,873		21,923					U
	Electronic Warfare Equipment										
45	AN/SLQ-32	A		366,147		340,706					U
	Reconnaissance Equipment										
46	Shipboard IW Exploit	A		218,103		188,486					U
47	Automated Identification System (AIS)			4,000		5,368					U
	Other Ship Electronic Equipment										
48	Cooperative Engagement Capability	B		39,076		30,452					U
49	Naval Tactical Command Support System (NTCSS)	A		11,391		15,154					U
50	ATDLS	A		29,822		52,753					U
51	Navy Command and Control System (NCCS)			3,769		3,390					U
52	Minesweeping System Replacement	A		32,367		19,448					U
53	Shallow Water MCM	B		8,616		8,730					U
54	Navstar GPS Receivers (SPACE)	A		10,703		23,294					U
55	American Forces Radio and TV Service	A		2,626		2,617					U
56	Strategic Platform Support Equip	A		9,467		7,973					U
	Aviation Electronic Equipment										
57	Ashore ATC Equipment	A		70,849		71,037					U
58	Afloat ATC Equipment	A		47,890		63,279					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
43	Fixed Surveillance System	A		438,944		193,446				213,000	U
44	SURTASS	A		21,923		63,838					U
	Electronic Warfare Equipment										
45	AN/SLQ-32	A		340,706		387,195					U
	Reconnaissance Equipment										
46	Shipboard IW Exploit	A		188,486		235,744					U
47	Automated Identification System (AIS)			5,368		3,862					U
	Other Ship Electronic Equipment										
48	Cooperative Engagement Capability	B		30,452		26,006					U
49	Naval Tactical Command Support System (NTCSS)	A		15,154		15,385					U
50	ATDLS	A		52,753		103,835					U
51	Navy Command and Control System (NCCS)			3,390		3,594					U
52	Minesweeping System Replacement	A		19,448		15,744					U
53	Shallow Water MCM	B		8,730		5,493					U
54	Navstar GPS Receivers (SPACE)	A		23,294		38,043					U
55	American Forces Radio and TV Service	A		2,617		2,592					U
56	Strategic Platform Support Equip	A		7,973		7,985					U
	Aviation Electronic Equipment										
57	Ashore ATC Equipment	A		71,037		83,475					U
58	Afloat ATC Equipment	A		63,279		65,113					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
43	Fixed Surveillance System	A		213,000		406,446	U
44	SURTASS	A				63,838	U
	Electronic Warfare Equipment						
45	AN/SLQ-32	A				387,195	U
	Reconnaissance Equipment						
46	Shipboard IW Exploit	A				235,744	U
47	Automated Identification System (AIS)					3,862	U
	Other Ship Electronic Equipment						
48	Cooperative Engagement Capability	B				26,006	U
49	Naval Tactical Command Support System (NTCSS)	A				15,385	U
50	ATDLS	A				103,835	U
51	Navy Command and Control System (NCCS)					3,594	U
52	Minesweeping System Replacement	A				15,744	U
53	Shallow Water MCM	B				5,493	U
54	Navstar GPS Receivers (SPACE)	A				38,043	U
55	American Forces Radio and TV Service	A				2,592	U
56	Strategic Platform Support Equip	A				7,985	U
	Aviation Electronic Equipment						
57	Ashore ATC Equipment	A				83,475	U
58	Afloat ATC Equipment	A				65,113	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
59	ID Systems	A		22,777		25,506					U
60	Joint Precision Approach And Landing System (			38,094		85,445					U
61	Naval Mission Planning Systems	A		11,966		15,296					U
	Other Shore Electronic Equipment										
62	Maritime Integrated Broadcast System										U
63	Tactical/Mobile C4I Systems	A		42,666		33,419					U
64	DCGS-N	A		10,219		18,677					U
65	CANES			404,891		409,571					U
66	RADIAC	A		8,175		6,450					U
67	CANES-Intell			53,465		52,713					U
68	GPETE	A		5,985		12,214					U
69	MASF			6,223		5,193					U
70	Integ Combat System Test Facility	A		6,251		6,028					U
71	EMI Control Instrumentation	A		4,183		4,209					U
72	Items Less Than $5 Million	A		143,089		153,334					U
	Shipboard Communications										
73	Shipboard Tactical Communications	A		43,196		47,811					U
74	Ship Communications Automation	A		109,152		128,728					U
75	Communications Items Under $5M	A		37,308		29,486					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
59	ID Systems	A		25,506		23,815					U
60	Joint Precision Approach And Landing System (			85,445		100,751					U
61	Naval Mission Planning Systems	A		15,296		13,947					U
	Other Shore Electronic Equipment										
62	Maritime Integrated Broadcast System					1,375					U
63	Tactical/Mobile C4I Systems	A		33,419		22,771					U
64	DCGS-N	A		18,677		18,872					U
65	CANES			409,571		389,585					U
66	RADIAC	A		6,450		10,335					U
67	CANES-Intell			52,713		48,654					U
68	GPETE	A		12,214		8,133					U
69	MASF			5,193		4,150					U
70	Integ Combat System Test Facility	A		6,028		5,934					U
71	EMI Control Instrumentation	A		4,209		4,334					U
72	Items Less Than $5 Million	A		153,334		159,815					U
	Shipboard Communications										
73	Shipboard Tactical Communications	A		47,811		56,106					U
74	Ship Communications Automation	A		128,728		124,288					U
75	Communications Items Under $5M	A		29,486		45,120					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
59	ID Systems	A				23,815	U
60	Joint Precision Approach And Landing System (					100,751	U
61	Naval Mission Planning Systems	A				13,947	U
	Other Shore Electronic Equipment						
62	Maritime Integrated Broadcast System					1,375	U
63	Tactical/Mobile C4I Systems	A				22,771	U
64	DCGS-N	A				18,872	U
65	CANES					389,585	U
66	RADIAC	A				10,335	U
67	CANES-Intell					48,654	U
68	GPETE	A				8,133	U
69	MASF					4,150	U
70	Integ Combat System Test Facility	A				5,934	U
71	EMI Control Instrumentation	A				4,334	U
72	Items Less Than $5 Million	A				159,815	U
	Shipboard Communications						
73	Shipboard Tactical Communications	A				56,106	U
74	Ship Communications Automation	A				124,288	U
75	Communications Items Under $5M	A				45,120	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
	Submarine Communications										
76	Submarine Broadcast Support	A		25,752		50,833					U
77	Submarine Communication Equipment	A		71,190		60,794					U
	Satellite Communications										
78	Satellite Communications Systems	A		41,902		45,084					U
79	Navy Multiband Terminal (NMT)			108,985		76,715					U
	Shore Communications										
80	Joint Communications Support Element (JCSE)	A		4,292		4,293					U
	Cryptographic Equipment										
81	Info Systems Security Program (ISSP)	A		150,099		166,540					U
82	MIO Intel Exploitation Team	A		988		968					U
	Cryptologic Equipment										
83	Cryptologic Communications Equip	A		31,994		13,090					U
	Other Electronic Support										
84	Navy METOC-1	A		231							U
85	NAVY METOC-4	A		231							U
86	DON UAS 1	A		3,158							U
87	DON UAS 2	A		2,305							U
88	DON ACTS	A		3,090							U
89	DON UAS Video 5 (Afloat)	A		4,376							U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
	Submarine Communications										
76	Submarine Broadcast Support	A		50,833		31,133					U
77	Submarine Communication Equipment	A		60,794		62,214					U
	Satellite Communications										
78	Satellite Communications Systems	A		45,084		47,421					U
79	Navy Multiband Terminal (NMT)			76,715		64,552					U
	Shore Communications										
80	Joint Communications Support Element (JCSE)	A		4,293		4,398					U
	Cryptographic Equipment										
81	Info Systems Security Program (ISSP)	A		166,540		157,551					U
82	MIO Intel Exploitation Team	A		968		985					U
	Cryptologic Equipment										
83	Cryptologic Communications Equip	A		13,090		15,906					U
	Other Electronic Support										
84	Navy METOC-1	A									U
85	NAVY METOC-4	A									U
86	DON UAS 1	A									U
87	DON UAS 2	A									U
88	DON ACTS	A									U
89	DON UAS Video 5 (Afloat)	A									U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
	Submarine Communications						
76	Submarine Broadcast Support	A				31,133	U
77	Submarine Communication Equipment	A				62,214	U
	Satellite Communications						
78	Satellite Communications Systems	A				47,421	U
79	Navy Multiband Terminal (NMT)					64,552	U
	Shore Communications						
80	Joint Communications Support Element (JCSE)	A				4,398	U
	Cryptographic Equipment						
81	Info Systems Security Program (ISSP)	A				157,551	U
82	MIO Intel Exploitation Team	A				985	U
	Cryptologic Equipment						
83	Cryptologic Communications Equip	A				15,906	U
	Other Electronic Support						
84	Navy METOC-1	A					U
85	NAVY METOC-4	A					U
86	DON UAS 1	A					U
87	DON UAS 2	A					U
88	DON ACTS	A					U
89	DON UAS Video 5 (Afloat)	A					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
90	Coast Guard Equipment	A		40,649		61,370					U
	Drug Interdiction Support										
91	Other Drug Interdiction Support	A		20,294							U
	Total Communications & Electronics Equip			3,163,993		3,051,805				310,503	
	Budget Activity 03: Aviation Support Equipment										
	Sonobuoys										
92	Sonobuoys - All Types	A		237,347		310,644				2,910	U
	Aircraft Support Equipment										
93	Minotaur	A				5,000					U
94	Weapons Range Support Equipment	A		92,664		101,843					U
95	Aircraft Support Equipment	A		105,693		135,211		39,295		13,420	U
96	Advanced Arresting Gear (AAG)	A		11,054		4,725					U
97	Meteorological Equipment	A		21,437		12,407					U
98	DCRS/DPL	A		656							U
99	Legacy Airborne MCM	A		11,299		15,998					U
100	Lamps Equipment			594		792					U
101	Aviation Support Equipment	A		37,874		62,389				500	U
102	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A		18,019		17,568					U
	Total Aviation Support Equipment			536,637		666,577		39,295		16,830	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
90	Coast Guard Equipment	A		61,370		70,689					U
	Drug Interdiction Support										
91	Other Drug Interdiction Support	A									U
	Total Communications & Electronics Equip			3,362,308		3,323,695				213,000	
	Budget Activity 03: Aviation Support Equipment										
	Sonobuoys										
92	Sonobuoys - All Types	A		313,554		237,639				26,196	U
	Aircraft Support Equipment										
93	Minotaur	A		5,000		5,077					U
94	Weapons Range Support Equipment	A		101,843		83,969					U
95	Aircraft Support Equipment	A		187,926		187,758				60,217	U
96	Advanced Arresting Gear (AAG)	A		4,725		16,059					U
97	Meteorological Equipment	A		12,407		15,192					U
98	DCRS/DPL	A									U
99	Legacy Airborne MCM	A		15,998		6,674					U
100	Lamps Equipment			792		1,189					U
101	Aviation Support Equipment	A		62,889		58,873					U
102	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A		17,568		60,937					U
	Total Aviation Support Equipment			722,702		673,367				86,413	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
90	Coast Guard Equipment	A				70,689	U
	Drug Interdiction Support						
91	Other Drug Interdiction Support	A					U
	Total Communications & Electronics Equip			213,000		3,536,695	
	Budget Activity 03: Aviation Support Equipment						
	Sonobuoys						
92	Sonobuoys - All Types	A		26,196		263,835	U
	Aircraft Support Equipment						
93	Minotaur	A				5,077	U
94	Weapons Range Support Equipment	A				83,969	U
95	Aircraft Support Equipment	A		60,217		247,975	U
96	Advanced Arresting Gear (AAG)	A				16,059	U
97	Meteorological Equipment	A				15,192	U
98	DCRS/DPL	A					U
99	Legacy Airborne MCM	A				6,674	U
100	Lamps Equipment					1,189	U
101	Aviation Support Equipment	A				58,873	U
102	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A				60,937	U
	Total Aviation Support Equipment			86,413		759,780	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
Budget Activity 04: Ordnance Support Equipment											
	Ship Gun System Equipment										
103	Ship Gun Systems Equipment	A		5,337		5,451					U
	Ship Missile Systems Equipment										
104	Harpoon Support Equipment	A									U
105	Ship Missile Support Equipment	A		194,258		208,326					U
106	Tomahawk Support Equipment	A		86,045		59,436					U
	FBM Support Equipment										
107	Strategic Missile Systems Equip	A		253,579		258,933					U
	ASW Support Equipment										
108	SSN Combat Control Systems	A		133,651		143,678					U
109	ASW Support Equipment	A		21,309		18,181					U
	Other Ordnance Support Equipment										
110	Explosive Ordnance Disposal Equip	B		41,838		15,244				9,007	U
111	Items Less Than $5 Million	A		5,378		5,071					U
	Other Expendable Ordnance										
112	Anti-Ship Missile Decoy System	A				38,462					U
113	Submarine Training Device Mods	A		56,834		67,229					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
Budget Activity 04: Ordnance Support Equipment											
	Ship Gun System Equipment										
103	Ship Gun Systems Equipment	A		5,451		5,540					U
	Ship Missile Systems Equipment										
104	Harpoon Support Equipment	A				208					U
105	Ship Missile Support Equipment	A		208,326		262,077					U
106	Tomahawk Support Equipment	A		59,436		84,087					U
	FBM Support Equipment										
107	Strategic Missile Systems Equip	A		258,933		258,910					U
	ASW Support Equipment										
108	SSN Combat Control Systems	A		143,678		173,770					U
109	ASW Support Equipment	A		18,181		26,584					U
	Other Ordnance Support Equipment										
110	Explosive Ordnance Disposal Equip	B		24,251		7,470				2,124	U
111	Items Less Than $5 Million	A		5,071		6,356					U
	Other Expendable Ordnance										
112	Anti-Ship Missile Decoy System	A		38,462		86,356					U
113	Submarine Training Device Mods	A		67,229		69,240					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
Budget Activity 04: Ordnance Support Equipment							
	Ship Gun System Equipment						
103	Ship Gun Systems Equipment	A				5,540	U
	Ship Missile Systems Equipment						
104	Harpoon Support Equipment	A				208	U
105	Ship Missile Support Equipment	A				262,077	U
106	Tomahawk Support Equipment	A				84,087	U
	FBM Support Equipment						
107	Strategic Missile Systems Equip	A				258,910	U
	ASW Support Equipment						
108	SSN Combat Control Systems	A				173,770	U
109	ASW Support Equipment	A				26,584	U
	Other Ordnance Support Equipment						
110	Explosive Ordnance Disposal Equip	B		2,124		9,594	U
111	Items Less Than $5 Million	A				6,356	U
	Other Expendable Ordnance						
112	Anti-Ship Missile Decoy System	A				86,356	U
113	Submarine Training Device Mods	A				69,240	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
114	Surface Training Equipment	A		206,771		222,647					U
	Total Ordnance Support Equipment			1,005,000		1,042,658				9,007	
	Budget Activity 05: Civil Engineering Support Equip										
	Civil Engineering Support Equipment										
115	Passenger Carrying Vehicles	A		5,037		4,562				173	U
116	General Purpose Trucks	A		2,474		9,474				408	U
117	Construction & Maintenance Equip	A		24,022		43,191					U
118	Fire Fighting Equipment	A		17,984		11,376				735	U
119	Tactical Vehicles	B		27,222		32,004					U
120	Amphibious Equipment	A		6,176							U
121	Pollution Control Equipment	A		2,713		2,633					U
122	Items less than $5 Million	A		42,498		53,467					U
123	Physical Security Vehicles	A		1,140		1,173					U
	Total Civil Engineering Support Equip			129,266		157,880				1,316	
	Budget Activity 06: Supply Support Equipment										
	Supply Support Equipment										
124	Supply Equipment	A		17,386		16,730				100	U
125	First Destination Transportation	A		6,499		5,389				510	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
114	Surface Training Equipment	A		222,647		192,245					U
	Total Ordnance Support Equipment			1,051,665		1,172,843				2,124	
	Budget Activity 05: Civil Engineering Support Equip										
	Civil Engineering Support Equipment										
115	Passenger Carrying Vehicles	A		4,735		6,123				177	U
116	General Purpose Trucks	A		9,882		2,693				416	U
117	Construction & Maintenance Equip	A		43,191		47,301					U
118	Fire Fighting Equipment	A		12,111		10,352				801	U
119	Tactical Vehicles	B		32,004		31,475					U
120	Amphibious Equipment	A									U
121	Pollution Control Equipment	A		2,633		2,630					U
122	Items less than $5 Million	A		53,467		47,972					U
123	Physical Security Vehicles	A		1,173		1,171					U
	Total Civil Engineering Support Equip			159,196		149,717				1,394	
	Budget Activity 06: Supply Support Equipment										
	Supply Support Equipment										
124	Supply Equipment	A		16,830		19,693					U
125	First Destination Transportation	A		5,899		4,956				520	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
114	Surface Training Equipment	A				192,245	U
	Total Ordnance Support Equipment			2,124		1,174,967	
	Budget Activity 05: Civil Engineering Support Equip						
	Civil Engineering Support Equipment						
115	Passenger Carrying Vehicles	A		177		6,300	U
116	General Purpose Trucks	A		416		3,109	U
117	Construction & Maintenance Equip	A				47,301	U
118	Fire Fighting Equipment	A		801		11,153	U
119	Tactical Vehicles	B				31,475	U
120	Amphibious Equipment	A					U
121	Pollution Control Equipment	A				2,630	U
122	Items less than $5 Million	A				47,972	U
123	Physical Security Vehicles	A				1,171	U
	Total Civil Engineering Support Equip			1,394		151,111	
	Budget Activity 06: Supply Support Equipment						
	Supply Support Equipment						
124	Supply Equipment	A				19,693	U
125	First Destination Transportation	A		520		5,476	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
126	Special Purpose Supply Systems	A		580,371		617,522					U
	Total Supply Support Equipment			604,256		639,641				610	
	Budget Activity 07: Personnel & Command Support Equip										
	Training Devices										
127	Training Support Equipment	A		3,400		3,633					U
128	Training and Education Equipment	A		20,511		87,471					U
	Command Support Equipment										
129	Command Support Equipment	A		68,736		56,102		35,720		2,800	U
130	Medical Support Equipment	A		17,127		10,633				1,794	U
132	Naval MIP Support Equipment	A		5,784		6,097					U
133	Operating Forces Support Equipment	A		16,281		16,905				1,090	U
134	C4ISR Equipment	A		3,576		25,831					U
135	Environmental Support Equipment	A		33,856		21,986				200	U
136	Physical Security Equipment	A		225,979		160,046				1,300	U
137	Enterprise Information Technology	A		21,445		54,833					U
	Other										
140	Next Generation Enterprise Service	A		127,535		122,832					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
126	Special Purpose Supply Systems	A		617,522		668,639					U
	Total Supply Support Equipment			640,251		693,288				520	
	Budget Activity 07: Personnel & Command Support Equip										
	Training Devices										
127	Training Support Equipment	A		3,633		4,026					U
128	Training and Education Equipment	A		87,471		73,454				11,500	U
	Command Support Equipment										
129	Command Support Equipment	A		94,622		32,390					U
130	Medical Support Equipment	A		12,427		974				3,525	U
132	Naval MIP Support Equipment	A		6,097		5,606					U
133	Operating Forces Support Equipment	A		17,995		16,024					U
134	C4ISR Equipment	A		25,831		6,697					U
135	Environmental Support Equipment	A		22,186		27,503					U
136	Physical Security Equipment	A		161,346		138,281				3,000	U
137	Enterprise Information Technology	A		54,833		42,680					U
	Other										
140	Next Generation Enterprise Service	A		122,832		184,443					U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
126	Special Purpose Supply Systems	A				668,639	U
	Total Supply Support Equipment			520		693,808	
	Budget Activity 07: Personnel & Command Support Equip						
	Training Devices						
127	Training Support Equipment	A				4,026	U
128	Training and Education Equipment	A		11,500		84,954	U
	Command Support Equipment						
129	Command Support Equipment	A				32,390	U
130	Medical Support Equipment	A		3,525		4,499	U
132	Naval MIP Support Equipment	A				5,606	U
133	Operating Forces Support Equipment	A				16,024	U
134	C4ISR Equipment	A				6,697	U
135	Environmental Support Equipment	A				27,503	U
136	Physical Security Equipment	A		3,000		141,281	U
137	Enterprise Information Technology	A				42,680	U
	Other						
140	Next Generation Enterprise Service	A				184,443	U

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
141	Cyberspace Activities	A									U
999	Classified Programs			20,481		16,346					U
	Total Personnel & Command Support Equip			564,711		582,715		35,720		7,184	
	Budget Activity 08: Spares and Repair Parts										
	Spares and Repair Parts										
142	Spares and Repair Parts	A		306,502		341,591					U
	Total Spares and Repair Parts			306,502		341,591					
	Total Other Procurement, Navy			9,350,479		10,075,257		75,015		351,250	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
141	Cyberspace Activities	A				16,523					U
999	Classified Programs			16,346		18,446					U
	Total Personnel & Command Support Equip			625,619		567,047				18,025	
	Budget Activity 08: Spares and Repair Parts										
	Spares and Repair Parts										
142	Spares and Repair Parts	A		341,591		374,195					U
	Total Spares and Repair Parts			341,591		374,195					
	Total Other Procurement, Navy			10,501,522		10,948,518				343,526	

Department of the Navy
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
141	Cyberspace Activities	A				16,523	U
999	Classified Programs					18,446	U
	Total Personnel & Command Support Equip			18,025		585,072	
	Budget Activity 08: Spares and Repair Parts						
	Spares and Repair Parts						
142	Spares and Repair Parts	A				374,195	U
	Total Spares and Repair Parts					374,195	
	Total Other Procurement, Navy			343,526		11,292,044	

THIS PAGE INTENTIONALLY LEFT BLANK

Master Line Item Table of Contents (by Appropriation then Line Number)

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
1	01	01	0131	Surface Power Equipment	Volume 1 - 1
2	01	02	0200	Surface Combatant HM&E	Volume 1 - 15
3	01	06	0670	Other Navigation Equipment	Volume 1 - 29
4	01	09	0840	Sub Periscope, Imaging and Supt Equip Prog	Volume 1 - 109
5	01	09	0900	DDG Mod	Volume 1 - 163
6	01	09	0910	Firefighting Equipment	Volume 1 - 243
7	01	09	0925	Command and Control Switchboard	Volume 1 - 259
8	01	09	0933	LHA/LHD Midlife	Volume 1 - 267
9	01	09	0935	Pollution Control Equipment	Volume 1 - 327
10	01	09	0941	Submarine Support Equipment	Volume 1 - 345
11	01	09	0942	Virginia Class Support Equipment	Volume 1 - 359
12	01	09	0944	LCS Class Support Equipment	Volume 1 - 369
13	01	09	0945	Submarine Batteries	Volume 1 - 381
14	01	09	0946	LPD Class Support Equipment	Volume 1 - 389
15	01	09	0947	DDG 1000 Class Support Equipment	Volume 1 - 433
16	01	09	0950	Strategic Platform Support Equip	Volume 1 - 445

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
17	01	09	0955	Deep Subm Sys Proj (DSSP) Equip	Volume 1 - 453
18	01	09	0960	CG Modernization	Volume 1 - 457
19	01	09	0970	LCAC	Volume 1 - 491
20	01	09	0977	Underwater EOD Equipment	Volume 1 - 495
21	01	09	0981	Items less than $5 Million	Volume 1 - 519
22	01	09	0989	Chemical Warfare Detectors	Volume 1 - 561
23	01	09	0990	Submarine Life Support System	Volume 1 - 589
24	01	10	1000	Ship Maintenance, Repair and Modernization	Volume 1 - 597
25	01	10	1010	Reactor Power Units	Volume 1 - 603
26	01	10	1020	Reactor Components	Volume 1 - 607
27	01	11	1130	Diving and Salvage Equipment	Volume 1 - 611
28	01	12	1210	Standard Boats	Volume 1 - 627
29	01	14	1445	Operating Forces IPE	Volume 1 - 641
30	01	15	1600	LCS Common Mission Modules Equipment	Volume 1 - 655
31	01	15	1601	LCS MCM Mission Modules	Volume 1 - 669
32	01	15	1602	LCS ASW Mission Modules	Volume 1 - 685
33	01	15	1603	LCS SUW Mission Modules	Volume 1 - 697
34	01	15	1604	LCS In-Service Modernization	Volume 1 - 707

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
35	01	15	1611	Small & Medium UUV	Volume 1 - 723
36	01	16	1610	LSD Midlife & Modernization	Volume 1 - 733

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
37	02	02	2026	SPQ-9B Radar	Volume 2 - 1
38	02	02	2136	AN/SQQ-89 Surf ASW Cmbt Sys	Volume 2 - 11
39	02	02	2150	SSN Acoustic Equipment	Volume 2 - 39
40	02	02	2176	Undersea Warfare Support Equipment	Volume 2 - 79
41	02	03	2210	Submarine Acoustic Warfare System	Volume 2 - 87
42	02	03	2213	Surface Ship Torpedo Def (SSTD)	Volume 2 - 115
43	02	03	2225	Fixed Surveillance System	Volume 2 - 125
44	02	03	2237	SURTASS	Volume 2 - 129
45	02	04	2312	AN/SLQ-32	Volume 2 - 153
46	02	05	2360	Shipboard IW Exploit	Volume 2 - 185
47	02	05	2361	Automatic Identification System (AIS)	Volume 2 - 217

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
48	02	07	2606	Cooperative Engagement Capability	Volume 2 - 223
49	02	07	2611	Naval Tact Cmd Supt Sys (NTCSS)	Volume 2 - 251
50	02	07	2614	Adv Tact Data Link Sys (ATDLS)	Volume 2 - 261
51	02	07	2618	Navy Command and Control System (NCCS)	Volume 2 - 273
52	02	07	2622	Minesweeping System Replacement	Volume 2 - 281
53	02	07	2624	Shallow Water MCM	Volume 2 - 293
54	02	07	2657	NAVSTAR GPS Receivers (Space)	Volume 2 - 303
55	02	07	2666	American Forces Radio and TV Service (AFRTS)	Volume 2 - 317
56	02	07	2676	Strategic Platform Support Equip	Volume 2 - 325
57	02	09	2820	Ashore ATC Equipment	Volume 2 - 329
58	02	09	2830	Afloat ATC Equipment	Volume 2 - 385
59	02	09	2851	ID Systems	Volume 2 - 429
60	02	09	2867	Joint Precision Approach and Landing System(JPALS)	Volume 2 - 465
61	02	09	2876	Naval Mission Planning Systems	Volume 2 - 471
62	02	10	2900	Maritime Integrated Broadcast System	Volume 2 - 479
63	02	10	2906	Tactical/Mobile C4I Systems	Volume 2 - 493
64	02	10	2914	Distributed Common Ground System-Navy (DCGS-N)	Volume 2 - 511
65	02	10	2915	CANES	Volume 2 - 535

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
66	02	10	2920	RADIAC	Volume 2 - 549
67	02	10	2925	CANES Intell	Volume 2 - 561
68	02	10	2940	Gen Purp Elec Test Equip (GPETE)	Volume 2 - 571
69	02	10	2950	Network Tactical Common Data Link (CDL)	Volume 2 - 577
70	02	10	2960	Integ Combat System Test Facility	Volume 2 - 585
71	02	10	2970	EMI Control Instrumentation	Volume 2 - 589
72	02	10	2980	Items less than $5 Million	Volume 2 - 593
73	02	11	3010	Shipboard Tactical Comms	Volume 2 - 631
74	02	11	3050	Ship Communications Automation	Volume 2 - 645
75	02	11	3057	Communications Items under $5M	Volume 2 - 669
76	02	12	3107	Submarine Broadcast Support	Volume 2 - 685
77	02	12	3130	Submarine Communication Equipment	Volume 2 - 689
78	02	13	3215	Satellite Communications Systems	Volume 2 - 693
79	02	13	3216	Navy Multiband Terminal (NMT)	Volume 2 - 709
80	02	14	3302	Joint Communications Support Element (JCSE)	Volume 2 - 727
81	02	15	3415	Info Systems Security Program (ISSP)	Volume 2 - 731
82	02	15	3417	MIO Intel Exploitation Team	Volume 2 - 769
83	02	16	3501	Cryptologic Communications Equip	Volume 2 - 773

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
90	02	17	3620	Coast Guard Equipment	Volume 2 - 787

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
92	03	01	4048	Sonobuoys - All Types	Volume 3 - 1
93	03	03	3640	Minotaur	Volume 3 - 17
94	03	03	4204	Weapons Range Support Equipment	Volume 3 - 21
95	03	03	4213	Aircraft Support Equipment	Volume 3 - 31
96	03	03	4217	Advanced Arresting Gear (AAG)	Volume 3 - 89
97	03	03	4226	Meteorological Equipment	Volume 3 - 103
98	03	03	4242	DCRS/DPL	Volume 3 - 111
99	03	03	4248	Legacy Airborne MCM	Volume 3 - 115
100	03	03	4250	Common Control System	Volume 3 - 129
101	03	03	4268	Aviation Support Equipment	Volume 3 - 133
102	03	03	4269	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl Stn	Volume 3 - 161

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
103	04	02	5111	Ship Gun Systems Equipment	Volume 4 - 1
104	04	03	5227	HARPOON Support Equipment	Volume 4 - 5
105	04	03	5231	Ship Missile Support Equipment	Volume 4 - 9
106	04	03	5253	Tomahawk Support Equipment	Volume 4 - 63
107	04	04	5358	Strategic Missile Systems Equip	Volume 4 - 69
108	04	05	5420	SSN Combat Control Systems	Volume 4 - 91
109	04	05	5429	ASW Support Equipment	Volume 4 - 119
110	04	06	5509	EOD Equipment	Volume 4 - 135
111	04	06	5543	Items Less Than $5 Million	Volume 4 - 147
112	04	07	5530	Anti-ship Missile Decoy System	Volume 4 - 153
113	04	07	5661	Submarine Training Device Mods	Volume 4 - 165
114	04	07	5664	Surface Training Equipment	Volume 4 - 179

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
115	05	01	6003	Passenger Carrying Vehicles	Volume 5 - 1
116	05	01	6007	General Purpose Trucks	Volume 5 - 15
117	05	01	6024	Construction & Maint Equip	Volume 5 - 27
118	05	01	6027	Fire Fighting Equipment	Volume 5 - 47
119	05	01	6028	Tactical Vehicles	Volume 5 - 53
120	05	01	6033	Amphibious Equipment	Volume 5 - 59
121	05	01	6058	Pollution Control Equipment	Volume 5 - 63
122	05	01	6060	Items less than $5 Million	Volume 5 - 69
123	05	01	6075	Physical Security Vehicles	Volume 5 - 97

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
124	06	01	7025	Supply Equipment	Volume 5 - 101
125	06	01	7066	First Destination Transportation	Volume 5 - 111

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
126	06	01	7069	Special Purpose Supply Systems	Volume 5 - 115

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
127	07	01	8081	Training Support Equipment	Volume 5 - 119
128	07	01	8101	Training and Education Equipment	Volume 5 - 141
129	07	02	8106	Command Support Equipment	Volume 5 - 171
130	07	02	8109	Medical Support Equipment	Volume 5 - 197
132	07	02	8114	Naval MIP Support Equipment	Volume 5 - 205
133	07	02	8118	Operating Forces Support Equipment	Volume 5 - 213
134	07	02	8120	C4ISR Equipment	Volume 5 - 221
135	07	02	8126	Environmental Support Equipment	Volume 5 - 229
136	07	02	8128	Physical Security Equipment	Volume 5 - 243
137	07	02	8161	Enterprise Information Technology	Volume 5 - 253
140	07	05	8164	Next Generation Enterprise Service	Volume 5 - 265
141	07	05	8645	Cyberspace Activities	Volume 5 - 273

Appropriation 1810N: Other Procurement, Navy

Line #	BA	BSA	Line Item Number	Line Item Title	Page
142	08	01	9020	Spares and Repair Parts	Volume 5 - 279

Master Line Item Table of Contents (Alphabetically by Line Item Title)

Line Item Title	Line Item Number	Line #	BA	BSA	Page
AN/SLQ-32	2312	45	02	04	Volume 2 - 153
AN/SQQ-89 Surf ASW Cmbt Sys	2136	38	02	02	Volume 2 - 11
ASW Support Equipment	5429	109	04	05	Volume 4 - 119
Adv Tact Data Link Sys (ATDLS)	2614	50	02	07	Volume 2 - 261
Advanced Arresting Gear (AAG)	4217	96	03	03	Volume 3 - 89
Afloat ATC Equipment	2830	58	02	09	Volume 2 - 385
Aircraft Support Equipment	4213	95	03	03	Volume 3 - 31
American Forces Radio and TV Service (AFRTS)	2666	55	02	07	Volume 2 - 317
Amphibious Equipment	6033	120	05	01	Volume 5 - 59
Anti-ship Missile Decoy System	5530	112	04	07	Volume 4 - 153
Ashore ATC Equipment	2820	57	02	09	Volume 2 - 329
Automatic Identification System (AIS)	2361	47	02	05	Volume 2 - 217
Aviation Support Equipment	4268	101	03	03	Volume 3 - 133
C4ISR Equipment	8120	134	07	02	Volume 5 - 221
CANES	2915	65	02	10	Volume 2 - 535
CANES Intell	2925	67	02	10	Volume 2 - 561
CG Modernization	0960	18	01	09	Volume 1 - 457

Line Item Title	Line Item Number	Line #	BA	BSA	Page
Chemical Warfare Detectors	0989	22	01	09	Volume 1 - 561
Coast Guard Equipment	3620	90	02	17	Volume 2 - 787
Command Support Equipment	8106	129	07	02	Volume 5 - 171
Command and Control Switchboard	0925	7	01	09	Volume 1 - 259
Common Control System	4250	100	03	03	Volume 3 - 129
Communications Items under $5M	3057	75	02	11	Volume 2 - 669
Construction & Maint Equip	6024	117	05	01	Volume 5 - 27
Cooperative Engagement Capability	2606	48	02	07	Volume 2 - 223
Cryptologic Communications Equip	3501	83	02	16	Volume 2 - 773
Cyberspace Activities	8645	141	07	05	Volume 5 - 273
DCRS/DPL	4242	98	03	03	Volume 3 - 111
DDG 1000 Class Support Equipment	0947	15	01	09	Volume 1 - 433
DDG Mod	0900	5	01	09	Volume 1 - 163
Deep Subm Sys Proj (DSSP) Equip	0955	17	01	09	Volume 1 - 453
Distributed Common Ground System-Navy (DCGS-N)	2914	64	02	10	Volume 2 - 511
Diving and Salvage Equipment	1130	27	01	11	Volume 1 - 611
EMI Control Instrumentation	2970	71	02	10	Volume 2 - 589
EOD Equipment	5509	110	04	06	Volume 4 - 135
Enterprise Information Technology	8161	137	07	02	Volume 5 - 253
Environmental Support Equipment	8126	135	07	02	Volume 5 - 229

Line Item Title	Line Item Number	Line #	BA	BSA	Page
Fire Fighting Equipment	6027	118	05	01	Volume 5 - 47
Firefighting Equipment	0910	6	01	09	Volume 1 - 243
First Destination Transportation	7066	125	06	01	Volume 5 - 111
Fixed Surveillance System	2225	43	02	03	Volume 2 - 125
Gen Purp Elec Test Equip (GPETE)	2940	68	02	10	Volume 2 - 571
General Purpose Trucks	6007	116	05	01	Volume 5 - 15
HARPOON Support Equipment	5227	104	04	03	Volume 4 - 5
ID Systems	2851	59	02	09	Volume 2 - 429
Info Systems Security Program (ISSP)	3415	81	02	15	Volume 2 - 731
Integ Combat System Test Facility	2960	70	02	10	Volume 2 - 585
Items Less Than $5 Million	5543	111	04	06	Volume 4 - 147
Items less than $5 Million	0981	21	01	09	Volume 1 - 519
Items less than $5 Million	2980	72	02	10	Volume 2 - 593
Items less than $5 Million	6060	122	05	01	Volume 5 - 69
Joint Communications Support Element (JCSE)	3302	80	02	14	Volume 2 - 727
Joint Precision Approach and Landing System(JPALS)	2867	60	02	09	Volume 2 - 465
LCAC	0970	19	01	09	Volume 1 - 491
LCS ASW Mission Modules	1602	32	01	15	Volume 1 - 685
LCS Class Support Equipment	0944	12	01	09	Volume 1 - 369
LCS Common Mission Modules Equipment	1600	30	01	15	Volume 1 - 655

Line Item Title	Line Item Number	Line #	BA	BSA	Page
LCS In-Service Modernization	1604	34	01	15	Volume 1 - 707
LCS MCM Mission Modules	1601	31	01	15	Volume 1 - 669
LCS SUW Mission Modules	1603	33	01	15	Volume 1 - 697
LHA/LHD Midlife	0933	8	01	09	Volume 1 - 267
LPD Class Support Equipment	0946	14	01	09	Volume 1 - 389
LSD Midlife & Modernization	1610	36	01	16	Volume 1 - 733
Legacy Airborne MCM	4248	99	03	03	Volume 3 - 115
MIO Intel Exploitation Team	3417	82	02	15	Volume 2 - 769
Maritime Integrated Broadcast System	2900	62	02	10	Volume 2 - 479
Medical Support Equipment	8109	130	07	02	Volume 5 - 197
Meteorological Equipment	4226	97	03	03	Volume 3 - 103
Minesweeping System Replacement	2622	52	02	07	Volume 2 - 281
Minotaur	3640	93	03	03	Volume 3 - 17
NAVSTAR GPS Receivers (Space)	2657	54	02	07	Volume 2 - 303
Naval MIP Support Equipment	8114	132	07	02	Volume 5 - 205
Naval Mission Planning Systems	2876	61	02	09	Volume 2 - 471
Naval Tact Cmd Supt Sys (NTCSS)	2611	49	02	07	Volume 2 - 251
Navy Command and Control System (NCCS)	2618	51	02	07	Volume 2 - 273
Navy Multiband Terminal (NMT)	3216	79	02	13	Volume 2 - 709
Network Tactical Common Data Link (CDL)	2950	69	02	10	Volume 2 - 577

Line Item Title	Line Item Number	Line #	BA	BSA	Page
Next Generation Enterprise Service	8164	140	07	05	Volume 5 - 265
Operating Forces IPE	1445	29	01	14	Volume 1 - 641
Operating Forces Support Equipment	8118	133	07	02	Volume 5 - 213
Other Navigation Equipment	0670	3	01	06	Volume 1 - 29
Passenger Carrying Vehicles	6003	115	05	01	Volume 5 - 1
Physical Security Equipment	8128	136	07	02	Volume 5 - 243
Physical Security Vehicles	6075	123	05	01	Volume 5 - 97
Pollution Control Equipment	0935	9	01	09	Volume 1 - 327
Pollution Control Equipment	6058	121	05	01	Volume 5 - 63
RADIAC	2920	66	02	10	Volume 2 - 549
Reactor Components	1020	26	01	10	Volume 1 - 607
Reactor Power Units	1010	25	01	10	Volume 1 - 603
SPQ-9B Radar	2026	37	02	02	Volume 2 - 1
SSN Acoustic Equipment	2150	39	02	02	Volume 2 - 39
SSN Combat Control Systems	5420	108	04	05	Volume 4 - 91
SURTASS	2237	44	02	03	Volume 2 - 129
Satellite Communications Systems	3215	78	02	13	Volume 2 - 693
Shallow Water MCM	2624	53	02	07	Volume 2 - 293
Ship Communications Automation	3050	74	02	11	Volume 2 - 645
Ship Gun Systems Equipment	5111	103	04	02	Volume 4 - 1

Line Item Title	Line Item Number	Line #	BA	BSA	Page
Ship Maintenance, Repair and Modernization	1000	24	01	10	Volume 1 - 597
Ship Missile Support Equipment	5231	105	04	03	Volume 4 - 9
Shipboard IW Exploit	2360	46	02	05	Volume 2 - 185
Shipboard Tactical Comms	3010	73	02	11	Volume 2 - 631
Small & Medium UUV	1611	35	01	15	Volume 1 - 723
Sonobuoys - All Types	4048	92	03	01	Volume 3 - 1
Spares and Repair Parts	9020	142	08	01	Volume 5 - 279
Special Purpose Supply Systems	7069	126	06	01	Volume 5 - 115
Standard Boats	1210	28	01	12	Volume 1 - 627
Strategic Missile Systems Equip	5358	107	04	04	Volume 4 - 69
Strategic Platform Support Equip	0950	16	01	09	Volume 1 - 445
Strategic Platform Support Equip	2676	56	02	07	Volume 2 - 325
Sub Periscope, Imaging and Supt Equip Prog	0840	4	01	09	Volume 1 - 109
Submarine Acoustic Warfare System	2210	41	02	03	Volume 2 - 87
Submarine Batteries	0945	13	01	09	Volume 1 - 381
Submarine Broadcast Support	3107	76	02	12	Volume 2 - 685
Submarine Communication Equipment	3130	77	02	12	Volume 2 - 689
Submarine Life Support System	0990	23	01	09	Volume 1 - 589
Submarine Support Equipment	0941	10	01	09	Volume 1 - 345
Submarine Training Device Mods	5661	113	04	07	Volume 4 - 165

Line Item Title	Line Item Number	Line #	BA	BSA	Page
Supply Equipment	7025	124	06	01	Volume 5 - 101
Surface Combatant HM&E	0200	2	01	02	Volume 1 - 15
Surface Power Equipment	0131	1	01	01	Volume 1 - 1
Surface Ship Torpedo Def (SSTD)	2213	42	02	03	Volume 2 - 115
Surface Training Equipment	5664	114	04	07	Volume 4 - 179
Tactical Vehicles	6028	119	05	01	Volume 5 - 53
Tactical/Mobile C4I Systems	2906	63	02	10	Volume 2 - 493
Tomahawk Support Equipment	5253	106	04	03	Volume 4 - 63
Training Support Equipment	8081	127	07	01	Volume 5 - 119
Training and Education Equipment	8101	128	07	01	Volume 5 - 141
UMCS-Unman Carrier Aviation(UCA)Mission Cntrl Stn	4269	102	03	03	Volume 3 - 161
Undersea Warfare Support Equipment	2176	40	02	02	Volume 2 - 79
Underwater EOD Equipment	0977	20	01	09	Volume 1 - 495
Virginia Class Support Equipment	0942	11	01	09	Volume 1 - 359
Weapons Range Support Equipment	4204	94	03	03	Volume 3 - 21

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	220.932	19.179	21.664	27.517	0.000	27.517	28.455	25.946	26.281	26.787	639.267	1,036.028
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	220.932	19.179	21.664	27.517	0.000	27.517	28.455	25.946	26.281	26.787	639.267	1,036.028
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**220.932**	**19.179**	**21.664**	**27.517**	**0.000**	**27.517**	**28.455**	**25.946**	**26.281**	**26.787**	**639.267**	**1,036.028**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.003	0.367	0.294	-	0.294	0.493	-	-	-	-	2.157
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides for procurement of AN/SPQ-9B Radars whose primary mission is to detect and track low flying Anti-Ship Missile targets in heavy clutter. The mission of the AN/SPQ-9B has been expanded to include the capability to detect and classify periscopes. The Periscope Detection and Discrimination (PDD) capability has been designed and incorporated to operate concurrently with the Anti-Ship Missile Defense (ASMD) capability.

[BR5IN AN/SPQ-9B FMP INSTALLATIONS]: AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that customarily require funding for planning yard Design Services Allocation (DSA) up to two years prior to the year of installation and funding for Advanced Planning (AP) one year prior to installation, to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules.

[BR6IN AN/SPQ-9B NON FMP INSTALLATIONS]: Provided funding for the installation of equipment for Land Based Test Sites (LBTS).

[P40A / BR040 TRANSMITTER UPGRADE FMP]: Funding was provided for installations of AN/SPQ-9B Transmitter Upgrades on LPD-17.

[P40A / BR040 TRANSMITTER UPGRADE NON-FMP EQUIPMENT]: Funding provided for Transmitter Upgrade Processor installations at Surface Warfare Engineering Facility (SWEF) and Combat Systems Engineering Development Site (CSEDS) (both non-FMP).

[P40A / BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)]: Procures product improvements generated by Engineering Change Proposals (ECPs); corrects problems reported by Fleet units; upgrades unreliable components and replaces obsolete components and parts no longer in production for AN/SPQ-9B Radar; and addresses supportability concerns. Purchases and installs ECPs, including Antenna Shock Upgrade Kits, Antenna Radar Components, Digital Signal Processor (DSP) Kits, Periscope Detection and Discrimination (PDD) Kits and engineering change kit hardware components. Antenna Shock Upgrade Kits are installed during Antenna Restorations. DSP and PDD kits are installed conjunctively via Alteration Installation Team (AIT) and can be accomplished outside of a CNO Availability.

[P40A / BR830 AN/SPQ-9B PRODUCTION SUPPORT]: Provides support for production of hardware and hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). Also includes support for cybersecurity compliance and software certification.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P3A / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT]: Procures AN/SPQ-9B Radars to add Anti-Ship Missile Defense (ASMD) capability to Shipboard Combat Systems. Procures radars to support combat systems on the following ship classes: CG, LHA, DDG, CVN, LHD, LPD, U.S. Coast Guard National Security Cutter and a Training Unit. Systems procured for Cruisers/Destroyers (CRUDES) and Amphibious Ships in FY14 and beyond include the Periscope Detection and Discrimination (PDD) capability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	SPQ-9B Radar				- / 132.248	- / 4.874	- / 8.149	- / 11.842	- / -	- / 11.842
P-3a	1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT (TBD)				- / 88.684	- / 14.305	- / 13.515	- / 15.675	- / 0.000	- / 15.675
P-40	**Total Gross/Weapon System Cost**				**- / 220.932**	**- / 19.179**	**- / 21.664**	**- / 27.517**	**- / 0.000**	**- / 27.517**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	SPQ-9B Radar				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT (TBD)				- / 16.619	- / 18.476	- / 19.298	- / 19.248	- / 601.291	- / 807.111
P-40	**Total Gross/Weapon System Cost**				**- / 28.455**	**- / 25.946**	**- / 26.281**	**- / 26.787**	**- / 639.267**	**- / 1,036.028**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	**Aggregated Items Title:** SPQ-9B Radar

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) BR040 AN/SPQ-9B RADAR																				
1.1) BR040 ANTENNA	A		2,529K	7	17.701	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) BR040 ANTENNA TEST STAND	A		1,025K	1	1.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) BR040 TRANSMITTER UPGRADE FMP	A		-	-	12.961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) BR040 TRANSMITTER UPGRADE NON-FMP EQUIPMENT	A		-	-	2.958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) BR040 AN/SPQ-9B RADAR			**-**	**-**	***34.645***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)																				
2.1) BR042 MISCELLANEOUS ECPs (1)	A		-	-	41.191	-	-	1.199	-	-	2.001	-	-	2.310	-	-	-	-	-	2.310
2.2) BR042 ANTENNA SHOCK UPGRADE KITS	A		527,428.57	7	3.692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) BR042 DIGITAL SIGNAL PROCESSOR KITS - PROCUREMENTS	A		380,800.00	5	1.904	126,468.00	3	0.379	125,624.00	5	0.628	128,017.00	7	0.896	-	-	-	128,017.00	7	0.896
2.4) BR042 DIGITAL SIGNAL PROCESSOR KITS - INSTALLS	A		56,000.00	5	0.280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5) BR042 PDD KITS - PROCUREMENT	A		700,555.56	9	6.305	396,987.00	3	1.191	395,188.00	5	1.976	401,341.00	11	4.415	-	-	-	401,341.00	11	4.415
2.6) BR042 PDD KITS - INSTALLS	A		240,000.00	9	2.160	-	-	-	298,000.00	3	0.894	303,671.00	5	1.518	-	-	-	303,671.00	5	1.518
Subtotal: 2) BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)			**-**	**-**	***55.532***	**-**	**-**	***2.769***	**-**	**-**	***5.499***	**-**	**-**	***9.139***	**-**	**-**	**-**	**-**	**-**	***9.139***
3) BR830 AN/SPQ-9B PRODUCTION SUPPORT																				
3.1) BR830 AN/SPQ-9B PRODUCTION SUPPORT (2)	A		-	-	20.444	-	-	2.105	-	-	2.650	-	-	2.703	-	-	-	-	-	2.703
Subtotal: 3) BR830 AN/SPQ-9B PRODUCTION SUPPORT			**-**	**-**	***20.444***	**-**	**-**	***2.105***	**-**	**-**	***2.650***	**-**	**-**	***2.703***	**-**	**-**	**-**	**-**	**-**	***2.703***
4) BRCA1 AN/SPQ-9B RADAR COMPONENTS																				

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	**Aggregated Items Title:** SPQ-9B Radar

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.1) BRCA1 AN/ SPQ-9B RADAR COMPONENTS	A		7,400K	2	14.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) BRCA1 AN/SPQ-9B RADAR COMPONENTS			**-**	**-**	***14.800***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) BRCA2 AN/SPQ-9B RADAR COMPONENTS																				
5.1) BRCA2 AN/ SPQ-9B RADAR COMPONENTS	A		6,800K	1	6.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) BRCA2 AN/SPQ-9B RADAR COMPONENTS			**-**	**-**	***6.800***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
6) WAXXX ACQUISITION WORKFORCE FUND																				
6.1) WAXXX ACQUISITION WORKFORCE FUND-2009	A		-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) WAXXX ACQUISITION WORKFORCE FUND			**-**	**-**	***0.027***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**132.248**	**-**	**-**	**4.874**	**-**	**-**	**8.149**	**-**	**-**	**11.842**	**-**	**-**	**-**	**-**	**-**	**11.842**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

(1) 1) Due to funding reductions in FY21 only one AN/SPQ-9B system will be procured vice two systems. This allowed for acceleration of additional DSP and PDD kits in FY21 to eliminate obsolete components from fielded systems to ensure long-term supportability and spares availability. Funding for PDD installations increased in FY22 accordingly due to the additional PDD kits being procured in FY21. 2) Miscellaneous ECPs primarily funds product improvements, corrects problems reported by Fleet units, upgrades unreliable components, replaces obsolete components/parts no longer in production, and addresses supportability concerns.

(2) AN/SPQ-9B Production Support provides support for production of hardware and production of hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). Also includes support for cybersecurity compliance packages in the enterprise mission assurance support service (eMASS), element, and combat system certifications.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	**Modification Number / Title:** 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	88.684	14.305	13.515	15.675	0.000	15.675	16.619	18.476	19.298	19.248	601.291	807.111
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	88.684	14.305	13.515	15.675	0.000	15.675	16.619	18.476	19.298	19.248	601.291	807.111
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**88.684**	**14.305**	**13.515**	**15.675**	**0.000**	**15.675**	**16.619**	**18.476**	**19.298**	**19.248**	**601.291**	**807.111**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[BR040 AN/SPQ-9B RADAR FMP EQUIPMENT] Procures AN/SPQ-9B Radars to add Anti-Ship Missile Defense (ASMD) capability to Shipboard Combat Systems. Procures radars to support combat systems on the following ship classes: CG, LHA, DDG, CVN, LHD, LPD, U.S. Coast Guard National Security Cutter and a Training Unit. Systems procured for Cruisers/Destroyer (CRUDES) and Amphibious Ships in FY14 and beyond also include the Periscope Detection and Discrimination (PDD) capability.

Notes: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT:

1) SPQ-9B was moved from BLI 5110 to BLI 2026 in FY2004. Prior to 2004, the procurement of the first five AN/SPQ-9B systems was funded under the Mk 86 program under BLI 5110. The installation costs for four out of five of these installs were included in the 2026 budget. This explains the difference of 81 installations and only 77 procurements in this budget (delta 4).

2) AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that customarily require funding for planning yard Design Services Allocation (DSA) up to two years prior to the year of installation and funding for Advanced Planning (AP) one year prior to installation, to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	**Modification Number / Title:** 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/SPQ-9B RADAR FMP EQUIPMENT	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT												
B Kits												
Recurring												
1.1.1) BR040 AN/SPQ-9B RADAR FMP EQUIPMENT - NonOrganic (3)	10 / 56.413	2 / 8.290	1 / 4.167	2 / 9.041	- / -	2 / 9.041	2 / 9.174	2 / 9.307	2 / 9.520	2 / 9.710	54 / 262.114	77 / 377.736
1.1.2) BR040 AN/SPQ-9B NON-RECURRING (TDP) - Organic	- / 1.888	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.888
Subtotal: Recurring	*- / 58.301*	*- / 8.290*	*- / 4.167*	*- / 9.041*	*- / -*	*- / 9.041*	*- / 9.174*	*- / 9.307*	*- / 9.520*	*- / 9.710*	*- / 262.114*	*- / 379.624*
Subtotal: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT	*10 / 58.301*	*2 / 8.290*	*1 / 4.167*	*2 / 9.041*	*- / -*	*2 / 9.041*	*2 / 9.174*	*2 / 9.307*	*2 / 9.520*	*2 / 9.710*	*54 / 262.114*	*77 / 379.624*
Subtotal: Procurement, All Modification Items	*- / 58.301*	*- / 8.290*	*- / 4.167*	*- / 9.041*	*- / -*	*- / 9.041*	*- / 9.174*	*- / 9.307*	*- / 9.520*	*- / 9.710*	*- / 262.114*	*- / 379.624*
Installation												
Modification Item 1 of 1: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT	- / 30.383	- / 6.015	- / 9.348	- / 6.634	- / 0.000	- / 6.634	- / 7.445	- / 9.169	- / 9.778	- / 9.538	- / 339.177	- / 427.487
Subtotal: Installation	*- / 30.383*	*- / 6.015*	*- / 9.348*	*- / 6.634*	*- / -*	*- / 6.634*	*- / 7.445*	*- / 9.169*	*- / 9.778*	*- / 9.538*	*- / 339.177*	*- / 427.487*
Total												
Total Cost (Procurement + Support + Installation)	**88.684**	**14.305**	**13.515**	**15.675**	**0.000**	**15.675**	**16.619**	**18.476**	**19.298**	**19.248**	**601.291**	**807.111**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	**Modification Number / Title:** 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT

Manufacturer Information

Manufacturer Name: DRS Laurel Technologies | Manufacturer Location: Largo, FL

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Aug 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025	Sep 2026

Installation Information

Method of Implementation: [none specified]:: Installation Name: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	10 / 30.383	1 / 5.450	2 / 3.651	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 39.484
FY 2019	- / -	0 / 0.565	0 / 5.121	2 / 3.158	0 / 0.000	2 / 3.158	- / -	- / -	- / -	- / -	0 / 0.000	2 / 8.844
FY 2020	- / -	- / -	0 / 0.576	0 / 2.302	0 / 0.000	0 / 2.302	1 / 1.601	- / -	- / -	- / -	0 / 0.000	1 / 4.479
FY 2021	- / -	- / -	- / -	0 / 1.174	0 / 0.000	0 / 1.174	0 / 4.648	2 / 3.258	- / -	- / -	0 / 0.000	2 / 9.080
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.196	0 / 4.670	2 / 3.270	- / -	0 / 0.000	2 / 9.136
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.241	0 / 5.242	2 / 2.900	0 / 0.000	2 / 9.383
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.266	0 / 5.346	2 / 2.958	2 / 9.570
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.292	2 / 8.470	2 / 9.762
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	55 / 327.749	55 / 327.749
Total	10 / 30.383	1 / 6.015	2 / 9.348	2 / 6.634	0 / 0.000	2 / 6.634	1 / 7.445	2 / 9.169	2 / 9.778	2 / 9.538	59 / 339.177	81 / 427.487

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	10	-	1	-	-	-	1	1	-	-	-	-	2	1	1	-	-	-	1	1	-	-	1	1	-	-	-	1	1	59	82
Out	9	1	-	-	-	-	-	2	1	-	-	-	-	2	-	1	1	-	-	1	1	-	-	1	1	-	-	-	1	60	82

Footnotes:

(3) 1) The plan was to procure two AN/SPQ-9B systems in FY21. Due to funding reductions in FY21, only one system will be procured vice two. As a result, FY21-FY22 installation costs were also reduced to reflect only one system being installed vice two. 2) SPQ-9B was moved from BLI 5110 to BLI 2026 in FY2004. Prior to 2004, the procurement of the first five AN/SPQ-9B systems was funded under the Mk 86 program under BLI 5110. The installation costs for four out of five of these installs were included in the 2026 budget. This explains the difference of 81 installations and only 77 procurements in this budget

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2026 / SPQ-9B Radar	**Modification Number / Title:** 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(delta 4). 3) AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that customarily require funding for planning yard Design Services Allocation (DSA) up to two years prior to the year of installation and funding for Advanced Planning (AP) one year prior to installation, to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,978.469	114.344	121.966	128.664	0.000	128.664	135.722	138.306	139.602	141.452	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,978.469	114.344	121.966	128.664	0.000	128.664	135.722	138.306	139.602	141.452	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,978.469**	**114.344**	**121.966**	**128.664**	**0.000**	**128.664**	**135.722**	**138.306**	**139.602**	**141.452**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	3.091	2.636	1.376	-	1.376	1.762	2.612	2.205	2.245	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY 2020 ($121.966M) to FY 2021 ($128.664M) increase ($+6.698M) is primarily due to the net effect of changes to:

Hardware Buys (-3):
- 1 less A(V)15 FLT IIA shipset buy
+ 1 additional A(V)15 FLT I/II shipset buy
- 2 less A(V)15 Tech Refresh shipset buys
- 1 less standalone Multi-Function Towed Array (MFTA) Major Equipment buy
- 1 less Surface Ship Engineering Site (SSES) upgrade
+ 1 additional Surface Combatant Systems Center (SCSC) Wallops upgrade

Installations (+4):
- 1 less A(V)15 FLT IIA shipset install
+ 2 additional A(V)15 FLT I/II shipset installs
+ 3 additional A(V)15 Tech Refresh shipset installs

Test Events (+6):
+ 1 additional Follow-On Operational Test & Evaluation (FOT&E) event
+ 5 additional Combat System Ship Qualification Trial (CSSQT) events

Major Engineering Changes (ECs):
- Addition of EC funding starting in FY 2021 ($+3.957M) to productize and backfit a cyber mitigation to the software for the Technical Insertion/Advanced Capability Build (TI/ACB) TI-14/ACB-13, TI-14/ACB-15, TI-16/ACB-15, TI-18/ACB-17 and TI-18/ACB-19 configurations of the AN/SQQ-89A(V)15 Surface Ship ASW Combat System. Other high priority Fleet Incident Reports (IRs) will be addressed in conjunction with these cyber upgrades, as they arise. These upgrades proactively increase the level of complexity for an adversary to develop and employ cyber exploits against AN/SQQ-89 TI/ACBs with this capability (rather than reactively patching software after a cyber threat is detected).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

Overall AN/SQQ-89(V) Program Description:

Anti-Submarine Warfare (ASW) remains a Navy core competency in a dynamic and uncertain maritime environment. U.S. adversaries continue to develop asymmetric capabilities and capacities to deter, disrupt, or delay the entry of U.S. and allied naval forces, and pose a constant challenge as the Maritime Strategy is implemented. Evolving submarine technologies offer enhanced stealth, speed, endurance, weapons, and operational proficiency, trends foretelling that the adversary submarine of the future will have a significantly larger sphere of influence, while presenting less vulnerability to ASW forces. The effective offensive engagement range of the adversary submarine of the future will continue to match or outrange individual U.S. and multinational platform sensors and weapons in many tactical environments. Submarines are an increasing threat to all Naval and Allied ships, particularly modern diesel and state-of-the-art nuclear submarines, and faster, more accurate torpedoes. Not only can the presence of potential hostile submarines delay naval combatant action until they are located and neutralized, submarines can also disrupt all seaborne logistics supply for any ground campaign as well as maritime commerce. ASW forces must be effective in all operating environments, ranging from the deep open ocean to the littorals, and are key to countering adversarial anti-access and area denial strategies.

The AN/SQQ-89(V) Surface Ship ASW Combat System provides integrated Undersea Warfare (USW) combat management, fire control, command and control, and on-board training to enable surface combatants to engage USW targets in both open ocean and littoral environments. The AN/SQQ-89(V) is a system comprised of many subsystems, which integrate the helo and its sensors, the ship's own organic sensors, weapons, torpedo detection, and a high fidelity Surface ASW Synthetic Trainer (SAST). Variants of the AN/SQQ-89(V) are currently in operation on in-service CG47 and DDG51 Class Surface Combatants.

AN/SQQ-89A(V)15 Surface Ship ASW Combat System Upgrade - Detailed Description:

A major upgrade to the AN/SQQ-89(V) legacy system, the AN/SQQ-89A(V)15 significantly decreases ship vulnerability to torpedo attack, improves surface ship USW lethality, and mitigates Commercial-Off-The-Shelf (COTS) obsolescence and supportability issues. The need for the AN/SQQ-89A(V)15 is articulated in Operational Requirements Document (ORD) #667-76-05 titled 'AN/SQQ-89 Improvement Program'.

The AN/SQQ-89A(V)15 upgrade is programmed for backfit on: select CG47 Class Baseline 3 and 4 (CGs 59-73) ships budgeted under OPN BLI 0960 (Cruiser Modernization); DDG51 Class Flight I/II (DDGs 51-78) ships budgeted under OPN BLI 0900 (DDG Modernization) and OPN BLI 2136 (represented here); and DDG51 Class Flight IIA and onward via OPN BLI 2136 (for DDGs 79-132 represented here) and SCN BLI 2122 (DDG51 Class Forward Fit for DDGs 133 and follow).

The AN/SQQ-89A(V)15 upgrade, developed under the RDT&EN Program Element (PE) 0205620N Project 1916 Surface ASW System Improvement program, capitalizes on previously fielded AN/SQQ-89(V) systems. The AN/SQQ-89A(V)15 is comprised of a tactical towed array sensor, the Multi-Function Towed Array (MFTA), and will replace standard, militarized, legacy components with Commercial-Off-The-Shelf (COTS) hardware to provide an ASW combat system with the capability for mid-frequency bistatic and multi-static sonar operations. The AN/SQQ-89A(V)15 features a mid-frequency bistatic hull/towed Sonar Echo Tracker Classifier (ETC); hull/towed Sonar with Acoustic Intercept (ACI) fused data for significantly improved torpedo defense; Handling & Stowage Group (H&SG) for MFTA operation; Torpedo Setting Panel (TSP); passive towed array processing; common sub/surface sensor performance and prediction; common NAVAIR/Surface Light Airborne Multi-Purpose System (LAMPS) processing; portable software; integrated supportability; and on-board training via the Surface ASW Synthetic Trainer (SAST). The AN/SQQ-89A(V)15 will be interoperable with AEGIS Weapons System (AWS) baselines; is Open Architecture (OA) compliant (meeting OA Level 3 requirements); provides significant reductions in weight, space, cooling, and power requirements over legacy AN/SQQ-89(V) systems; is Grade A shock qualified; supports Digital Fire Control Integration (DFCI) capability; and is integrated with the Battle Force Tactical Trainer (BFTT).

AN/SQQ-89A(V)15 Technology Insertion/Refresh - Detailed Description:

Additionally, to be effective against increasingly stealthy threats in an often ambiguous undersea environment, future sensors must be environmentally adaptive, have very low false alarm rates, and exploit the full range of current and future submarine detection vulnerabilities. Via the Advanced Capability Build (ACB) process under RDT&EN PE 0205620N Project 1916 (ACB-15, ACB-17, ACB-19, etc.), these types of maturing/proven USW technologies will be folded into the AN/SQQ-89A(V)15 production and future technology refresh programs. Leveraging the submarine community's Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) process, the AN/SQQ-89A(V)15 Tech Refresh program procures upgraded software/hardware technology for all CG47 and DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15. This process has proven to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat to ensure systems remain effective well into the 21st century. Studies of the submarine and surface ASW technology show that system upgrades are most critical six to nine (6 to 9) years after initial installation of the AN/SQQ-89A(V)15,

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

as failure rates within this period begin to rise. Establishing a stable technology refresh program will ensure the Fleet maintains critical Undersea Warfare capability (threat-pacing improvements) and productivity (Increased Operational Availability (Ao)) while reducing the Total Ownership Cost (TOC) to the Navy.

AN/SQQ-89A(V)15 YEAR-TO-YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:
1st Budget Year - Procurement of equipment.
2nd Budget Year - Ordering of incidental installation material and performance of mandatory advance planning yard design tasks and ship checks, which are required to be budgeted in the year *prior* to the physical installation of equipment. These installation costs are depicted in the P-3a exhibit with a quantity of "0".
3rd Budget Year - Installation of equipment.

An average, aggregate AN/SQQ-89A(V)15 shipset unit cost is comprised of multiple contract/funding vehicles. Additionally, these unit costs can vary as they are dependent on the pre-existing legacy AN/SQQ-89(V) configuration of each ship.

AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date, and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities. Fleet availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.

See the following for a description of all P-40a and P-3a cost items that make up this budget:

[P40A / DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15]: DB400 Cost Elements/Descriptions as Follows:

[P40A / SYSTEM UPDATES (NON RECURRING ENGINEERING)]: Item Number 1.1 - Consists of the NRE efforts associated with the technology refresh/replacement of legacy AN/SQQ-89(V) equipment with updated Commercial-Off-The-Shelf (COTS) processors, including material procurement, fabrication, and integration of Government Furnished Property (GFP), as performed by the prime contractor. Hardware reviews will be conducted on an annual basis to determine if hardware changes are warranted based on Commercial-Off-The-Shelf (COTS) obsolescence and to identify applicable state-of-the-practice hardware components. This line also includes start-up/transition funding required for the AN/SQQ-89(V) prime in the first year of each new production/design agent contract.

[P40A / ENGINEERING CHANGES (ECs)]: Item Number 1.2 - Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-89A(V)15 systems. Funding will be used to support non-recurring first article test efforts associated with the changing Commercial-Off-The-Shelf (COTS) environment as well as Reliability, Maintainability, and Availability (RM&A) modifications requested by the Fleet; correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and correct design errors found during testing.

- FY 2020 to FY 2021 increase ($+3.957M) reflects the addition of funding starting in FY 2021 for a major Engineering Change (EC) required to productize and backfit a cyber mitigation to the software for the Technical Insertion/Advanced Capability Build (TI/ACB) TI-14/ACB-13, TI-14/ACB-15, TI-16/ACB-15, TI-18/ACB-17 and TI-18/ACB-19 configurations of the AN/SQQ-89A(V)15 Surface Ship ASW Combat System. Other high priority Fleet Incident Reports (IRs) will be addressed in conjunction with these cyber upgrades, as they arise. These upgrades proactively increase the level of complexity for an adversary to develop and employ cyber exploits against AN/SQQ-89 TI/ACBs with this capability (rather than reactively patching software after a cyber threat is detected).

[P40A / INTEGRATED LOGISTICS SUPPORT (ILS)]: Item Number 1.3 - Funding is provided for all ILS planning and coordination elements associated with every AN/SQQ-89A(V)15 modification/procurement/installation, including: configuration management and control of the hardware and software associated with each modification such as Maintenance and Material Management (3M); planned and corrective maintenance procedures and drawings; supporting the procurement of upgrades to Technical Training Equipment (TTE) for shore training sites; changes to maintenance concepts and associated updates to technical documentation, such as technical manuals; development of revisions to both operator and maintenance training materials as part of the initial training curriculum development; revisions to the Navy Training System Plan; initial conduct of instructor training (train-the-trainer) until such time that the training community assumes the responsibility; modifications to supply support related provisioning data and

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

identification of related changes to Allowance Parts Lists (APLs) and Program Support Data (PSD) spares procurement lists; and Packaging, Handling, Storage and Transportation (PHST) support during the procurement, Installation and Checkout (INCO), and testing stages of the AN/SQQ-89A(V)15 to meet evolving capabilities.

[P40A / AEGIS INTEGRATION EVENTS (AIE)]: Item Number 1.4 - Recurring engineering support services associated with AN/SQQ-89A(V)15 Surface Ship ASW Combat System equipment at the Surface Combatant Systems Center (SCSC) Wallops Island, VA test facility to support land-based testing, external interface testing, and AEGIS Integration Event (AIE) production systems testing for interoperability risk reduction analysis purposes as necessary to certify that each incremental AN/SQQ-89A(V)15 hardware/software build is compatible with multiple AEGIS Weapons System (AWS) baselines prior to installation.

[P40A / COMBAT SYSTEMS SHIP QUALIFICATION TRIALS (CSSQTs)]: Item Number 1.5 - CSSQTs are required per Naval Sea Systems Instruction 90963.1C for all ships undergoing significant conversion/ modernization availabilities. CSSQTs consist of a series of at-sea exercises and tests to verify/certify the AN/SQQ-89A(V)15 or AN/SQQ-89A(V)15 Technology Refresh system has been installed properly and can be operated and maintained safely and effectively. CSSQTs follow every AN/SQQ-89A(V)15 FLT I/II/IIA first-of-its-kind or AN/SQQ-89A(V)15 Technology Refresh installation. CSSQT costs are dependent on the number, scope, and complexity of CSSQTs planned per Fiscal Year (FY). CSSQTs planned for AN/SQQ-89A(V)15 FLT I/II/IIA installs are higher in cost, scope and complexity than those for AN/SQQ-89A(V)15 Technology Refreshes.

FY 2020 and FY 2021 costs are broken down as follows:

- In FY 2020 ($3.791M total), four (4) CSSQTs are planned (one (1) after a major AN/SQQ-89A(V)15 FLT IIA install at $1.166M per CSSQT = $1.166M, and three (3) after AN/SQQ-89A(V)15 Technology Refresh installs at $0.875M per CSSQT = $2.625M).

- In FY 2021 ($7.736M total), eight (8) CSSQTs are planned (two (2) after major AN/SQQ-89A(V)15 FLT I/II installs at $1.189M per CSSQT = $2.378M, and six (6) after AN/SQQ-89A(V)15 Technology Refresh installs at $0.893M per CSSQT = $5.358M).

[P40A / FOLLOW-ON OPERATIONAL TEST & EVALUATION (FOT&E)]: Item Number 1.6 - Represents the final independent test of each new increment of the AN/SQQ-89A(V)15 production baseline (i.e. ACB-15, ACB-17, ACB-19, etc.) conducted in support of the Director, Operational Test and Evaluation Title X review and report to the Congress. Follow-On Operational Test & Evaluation (FOT&E) events are conducted to ensure each increment meets the operational effectiveness and suitability requirements for each incremental AN/SQQ-89 ACB production baseline, along with its readiness and performance goals. Each test cycle is planned the year after initial ACB baseline fielding to allow time for installation and to verify performance prior to conducting the FOT&E. FOT&E costs are primarily biennial driven, and dependent on the scope and complexity of the next new AN/SQQ-89 Advanced Capability Build (ACB) production baseline release being tested.

FY 2020 and FY 2021 costs are broken down as follows:

- In FY 2020, there is no requirement to conduct an FOT&E event.

- In FY 2021 ($2.131M), funding is required to conduct an FOT&E event on the next new AN/SQQ-89A(V)15 ACB production baseline release.

[P40A / FLEET ASW TRAINING CENTER (FLTASWTRACEN)]: Item Number 1.7 - Upgrade and virtualization of AN/SQQ-89A(V)15 training equipment for the Fleet ASW Training Center, San Diego, CA. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines and to implement Fleet prioritized warfighting training improvements to meet evolving capabilities. FLTASWTRACEN costs are dependent on the scope and complexity of training equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines.

[P40A / SURFACE SHIP ENGINEERING SITE (SSES)]: Item Number 1.8 - Procurement of AN/SQQ-89A(V)15 equipment for land-based sites, including the SSES at the AN/SQQ-89(V) prime vendor's facility, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit AN/SQQ-89A(V)15 Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SSES

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines.

FY 2020 and FY 2021 costs are broken down as follows:

- In FY 2020 ($2.948M), funding is required to upgrade the equipment at the SSES land-based site.

- In FY 2021, there is no requirement to upgrade equipment at the SSES land-based site.

[P40A / SURFACE COMBATANT SYSTEMS CENTER (SCSC)]: Item Number 1.9 - Procurement of AN/SQQ-89A(V)15 equipment for land-based sites including the Surface Combatant Systems Center (SCSC) at Wallops Island, VA, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SCSC Wallops costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines.

FY 2020 and FY 2021 costs are broken down as follows:

- In FY 2020, there is no requirement to upgrade equipment at the SCSC Wallops Island land-based site.

- In FY 2021 ($2.027M), funding is required to upgrade the equipment at the SCSC Wallops Island land-based site.

[P40A / MULTI-FUNCTION TOWED ARRAY (MFTA) MAJOR EQUIPMENT]: Item Number 1.10 - Procurement of Multi-Function Towed Array (MFTA) full module sets required for expeditious replacement in the event of major damage (the MFTA is considered a principle item). The MFTA is a key component of the AN/SQQ-89A(V)15 USW Combat System upgrade on Surface Combatants and enables ships to have active bi-statics, Continuous Active Sonar (CAS), adaptive beamforming, passive bellringers, and the use of new sensors for advanced torpedo detection. FY 2020 and follow MFTA procurements are of the improved TB-37X version which is required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, as well as procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components.

[P40A / DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15]: DB830 Cost Element/Description as Follows:

[P40A / PRODUCTION ENGINEERING]: Item Number 2.1 - Funding is for AN/SQQ-89A(V)15 program In-Service Engineering Agent (ISEA), Software Support Activity (SSA), Acquisition Engineering Agent (AEA), and Technical Design Agent (TDA) efforts in performing the following functions: writing of contracts; review and evaluation of production design data, documentation and Contract Data Requirements Lists (CDRLs); letting of production contract awards; on-site engineering support at the prime integrator's facility; production configuration control and quality assurance (Production Inspection Test (PIT) and Production Reliability Acceptance Test (PRAT)); witnessing of segment/system integration tests and preparation of reports; conduct of first article and factory acceptance tests; collection of performance metrics; generation/assessment of Software Problem Reports (SPRs) and coordination with vendors; value and maintenance engineering; coordination with AEGIS regarding interface definition and ship integration; support safety review and AEGIS Integration Events (AIE); provide plans, procedures and inputs to support Information Assurance (IA) mandates; provide status reports and technical briefings; support meetings with program office; and all other production support efforts directly related to delivery of AN/SQQ-89A(V)15 software and hardware.

[P40A / DB900 - CONSULTING SERVICES - SQQ-89A(V)15]: DB900 Cost Element/Description as Follows:

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

[P40A / CONSULTING SERVICES]: Item Number 3.1 - Funding to provide assistance in the following areas: program and financial management; system specification validation; production planning; business case and market analyses; vendor cost, schedule, performance, production, and contract deliverable monitoring; installation planning and coordination; Integrated Logistics Support (ILS) asset management, planning, documentation, and coordination; and evaluation of Engineering Change Proposals (ECPs).

[P3A / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE]: See the following:

AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on all DDG79-112 Flight IIA ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.

AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

[P3A / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE]: See the following:

AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on select DDG51-78 FLT I/II ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.

AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

[P3A - 3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE]: See the following:

AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of a subset of AN/SQQ-89A(V)15 equipment, specifically the Multi-Function Towed Array (MFTA) and Handling & Stowage Group (H&SG), for subsequent installation on all DDG113-132 ships during their Post Delivery Availability (PDA) or Post Shakedown Availability (PSA) periods, to upgrade the ASW sonar suite from an AN/SQQ-89(V)15 configuration to the AN/SQQ-89A(V)15 configuration.

AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB6IN INSTALLATION: Physical installation of the H&SG and MFTA on DDG113-132 ships during their PDA or PSA period which includes the installation of an egress, under-deck stiffeners, cables, bulkheads, opening and closing of the transom, the winch, levelwind, fairlead and control station, decking, painting, and final system testing, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

[P3A - 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH]: See the following:

AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB400 PROCUREMENT: Procurement of software/hardware technology upgrades for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15, as necessary to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat and ensure the system remains effective well into the 21st century. Updating the hardware and software will ensure the Fleet maintains critical Undersea Warfare capability while reducing obsolescence. Establishing a technology refresh program provides a method for rapid response to meet Fleet Anti-Submarine Warfare (ASW) requirements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB6IN INSTALLATION: Funding is for the physical installation of the AN/SQQ-89A(V)15 Technology Refresh upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM	P-5a			- / 1,350.713	- / 32.679	- / 29.154	- / 34.455	- / -	- / 34.455
P-3a	1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE (Warfighting Capability)				- / 450.769	- / 6.737	- / 17.830	- / 1.189	- / 0.000	- / 1.189
P-3a	2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE (Warfighting Capability)				- / 40.693	- / 23.785	- / 12.764	- / 31.954	- / 0.000	- / 31.954
P-3a	3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE (Warfighting Capability)				- / 52.619	- / 15.301	- / 16.007	- / 16.329	- / 0.000	- / 16.329
P-3a	4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH (Warfighting Capability)				- / 83.675	- / 35.842	- / 46.211	- / 44.737	- / 0.000	- / 44.737
P-40	**Total Gross/Weapon System Cost**				**- / 1,978.469**	**- / 114.344**	**- / 121.966**	**- / 128.664**	**- / 0.000**	**- / 128.664**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE (Warfighting Capability)				- / 5.897	- / 12.807	- / 1.255	- / 6.221	- / 0.000	- / 502.705
P-3a	2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE (Warfighting Capability)				- / 28.964	- / 23.391	- / 11.307	- / 16.655	- / 6.572	- / 196.085
P-3a	3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE (Warfighting Capability)				- / 16.655	- / 16.988	- / 17.326	- / 4.127	- / 3.704	- / 159.056
P-3a	4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH (Warfighting Capability)				- / 49.828	- / 51.128	- / 78.183	- / 78.210	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 135.722**	**- / 138.306**	**- / 139.602**	**- / 141.452**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY 2021 budget request primarily supports the upgrade of legacy, in-service AN/SQQ-89(V) systems to the superior AN/SQQ-89A(V)15 USW Combat System baseline. Additionally, this budget line item will be responsible for periodic technology refresh initiatives (every 6-9 years per AN/SQQ-89A(V)15 equipped ship) in conjunction with previously fielded AN/SQQ-89A(V)15 systems across all CG47 and DDG51 Class platforms (software/hardware technology upgrades/insertions) to pace the threat and remain effective well into the 21st century.

FY 2020 ($121.966M) to FY 2021 ($128.664M) increase ($+6.698M) is primarily due to the net effect of changes to:

Hardware Buys (-3):
- 1 less A(V)15 FLT IIA shipset buy
+ 1 additional A(V)15 FLT I/II shipset buy
- 2 less A(V)15 Tech Refresh shipset buys

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		

- 1 less standalone Multi-Function Towed Array (MFTA) Major Equipment buy
- 1 less Surface Ship Engineering Site (SSES) upgrade
+ 1 additional Surface Combatant Systems Center (SCSC) Wallops upgrade

Installations (+4):
- 1 less A(V)15 FLT IIA shipset install
+ 2 additional A(V)15 FLT I/II shipset installs
+ 3 additional A(V)15 Tech Refresh shipset installs

Test Events (+6):
+ 1 additional Follow-On Operational Test & Evaluation (FOT&E) event
+ 5 additional Combat System Ship Qualification Trial (CSSQT) events

Major Engineering Changes (ECs):
- Addition of EC funding starting in FY 2021 ($+3.957M) to productionize and backfit a cyber mitigation to the software for the Technical Insertion/Advanced Capability Build (TI/ACB) TI-14/ACB-13, TI-14/ACB-15, TI-16/ACB-15, TI-18/ACB-17 and TI-18/ACB-19 configurations of the AN/SQQ-89A(V)15 Surface Ship ASW Combat System. Other high priority Fleet Incident Reports (IRs) will be addressed in conjunction with these cyber upgrades, as they arise. These upgrades proactively increase the level of complexity for an adversary to develop and employ cyber exploits against AN/SQQ-89 TI/ACBs with this capability (rather than reactively patching software after a cyber threat is detected).

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Aggregated Items Title:** AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15																				
1.1) SYSTEM UPDATES (NON RECURRING ENGINEERING)			-	-	19.320	-	-	1.529	-	-	1.575	-	-	1.607	-	-	-	-	-	1.607
1.2) ENGINEERING CHANGES (ECs) (1)			-	-	1,102.083	-	-	11.731	-	-	2.171	-	-	6.128	-	-	-	-	-	6.128
1.3) INTEGRATED LOGISTICS SUPPORT (ILS)			-	-	43.037	-	-	3.096	-	-	3.065	-	-	3.126	-	-	-	-	-	3.126
1.4) AEGIS INTEGRATION EVENTS (AIE)			-	-	25.542	-	-	2.042	-	-	2.001	-	-	2.041	-	-	-	-	-	2.041
1.5) COMBAT SYSTEMS SHIP QUALIFICATION TRIALS (CSSQTs) (2)			-	-	38.035	-	-	4.903	-	-	3.791	-	-	7.736	-	-	-	-	-	7.736
1.6) FOLLOW-ON OPERATIONAL TEST & EVALUATION (FOT&E) (3)			-	-	6.485	-	-	2.048	-	-	-	-	-	2.131	-	-	-	-	-	2.131
1.7) FLEET ASW TRAINING CENTER (FLTASWTRACEN)			-	-	4.417	-	-	0.973	-	-	0.992	-	-	1.012	-	-	-	-	-	1.012
1.8) SURFACE SHIP ENGINEERING SITE (SSES) (4)			-	-	14.197	-	-	-	-	-	2.948	-	-	-	-	-	-	-	-	-
1.9) SURFACE COMBATANT SYSTEMS CENTER (SCSC) (5)			-	-	4.258	-	-	1.910	-	-	-	-	-	2.027	-	-	-	-	-	2.027
1.10) MULTI-FUNCTION TOWED ARRAY (MFTA) MAJOR EQUIPMENT(†)	A		-	-	-	-	-	-	4,134K	2	8.267	4,217K	1	4.217	-	-	-	4,217K	1	4.217
Subtotal: 1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15			**-**	**-**	***1,257.374***	**-**	**-**	***28.232***	**-**	**-**	***24.810***	**-**	**-**	***30.025***	**-**	**-**	**-**	**-**	**-**	***30.025***
2) DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15																				
2.1) PRODUCTION ENGINEERING			-	-	72.668	-	-	3.191	-	-	3.123	-	-	3.185	-	-	-	-	-	3.185
Subtotal: 2) DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15			**-**	**-**	***72.668***	**-**	**-**	***3.191***	**-**	**-**	***3.123***	**-**	**-**	***3.185***	**-**	**-**	**-**	**-**	**-**	***3.185***

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Aggregated Items Title:** AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
3) DB900 - CONSULTING SERVICES - SQQ-89A(V)15																				
3.1) CONSULTING SERVICES			-	-	20.671	-	-	1.256	-	-	1.221	-	-	1.245	-	-	-	-	-	1.245
Subtotal: 3) DB900 - CONSULTING SERVICES - SQQ-89A(V)15			**-**	**-**	***20.671***	**-**	**-**	***1.256***	**-**	**-**	***1.221***	**-**	**-**	***1.245***	**-**	**-**	**-**	**-**	**-**	***1.245***
Total			**-**	**-**	**1,350.713**	**-**	**-**	**32.679**	**-**	**-**	**29.154**	**-**	**-**	**34.455**	**-**	**-**	**-**	**-**	**-**	**34.455**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) Item Number 1.2 - ENGINEERING CHANGES (ECs): FY 2020 to FY 2021 increase ($+3.957M) reflects the addition of funding starting in FY 2021 for a major Engineering Change (EC) required to productize and backfit a cyber mitigation to the software for the Technical Insertion/Advanced Capability Build (TI/ACB) TI-14/ACB-13, TI-14/ACB-15, TI-16/ACB-15, TI-18/ACB-17 and TI-18/ACB-19 configurations of the AN/SQQ-89A(V)15 Surface Ship ASW Combat System. Other high priority Fleet Incident Reports (IRs) will be addressed in conjunction with these cyber upgrades, as they arise. These upgrades proactively increase the level of complexity for an adversary to develop and employ cyber exploits against AN/SQQ-89 TI/ACBs with this capability (rather than reactively patching software after a cyber threat is detected).

(2) Item Number 1.5 - COMBAT SYSTEMS QUALIFICATIONS TRIALS (CSSQTs): CSSQTs are required per Naval Sea Systems Instruction 90963.1C for all ships undergoing significant conversion/modernization availabilities. CSSQTs consist of a series of at-sea exercises and tests to verify/certify the AN/SQQ-89A(V)15 or AN/SQQ-89A(V)15 Technology Refresh system has been installed properly and can be operated and maintained safely and effectively. CSSQTs follow every AN/SQQ-89A(V)15 FLT I/II/IIA first-of-its-kind or AN/SQQ-89A(V)15 Technology Refresh installation. CSSQT costs are dependent on the number, scope, and complexity of CSSQTs planned per Fiscal Year (FY). CSSQTs planned for AN/SQQ-89A(V)15 FLT I/II/IIA installs are higher in cost, scope and complexity than those for AN/SQQ-89A(V)15 Technology Refreshes. FY 2020 and FY 2021 costs are broken down as follows: In FY 2020 ($3.791M total), four (4) CSSQTs are planned (one (1) after a major AN/SQQ-89A(V)15 FLT IIA install at $1.166M per CSSQT = $1.166M, and three (3) after AN/SQQ-89A(V)15 Technology Refresh installs at $0.875M per CSSQT = $2.625M). In FY 2021 ($7.736M total), eight (8) CSSQTs are planned (two (2) after major AN/SQQ-89A(V)15 FLT I/II installs at $1.189M per CSSQT = $2.378M, and six (6) after AN/SQQ-89A(V)15 Technology Refresh installs at $0.893M per CSSQT = $5.358M).

(3) Item Number 1.6 - FOLLOW-ON OPERATIONAL TEST & EVALUATION (FOT&E): Represents the final independent test of each new increment of the AN/SQQ-89A(V)15 production baseline (i.e. ACB-15, ACB-17, ACB-19, etc.) conducted in support of the Director, Operational Test and Evaluation Title X review and report to the Congress. Follow-On Operational Test & Evaluation (FOT&E) events are conducted to ensure each increment meets the operational effectiveness and suitability requirements for each incremental AN/SQQ-89 ACB production baseline, along with its readiness and performance goals. Each test cycle is planned the year after initial ACB baseline fielding to allow time for installation and to verify performance prior to conducting the FOT&E. FOT&E costs are primarily biennial driven, and dependent on the scope and complexity of the next new AN/SQQ-89 Advanced Capability Build (ACB) production baseline release being tested. FY 2020 and FY 2021 costs are broken down as follows: In FY 2020, there is no requirement to conduct an FOT&E event. In FY 2021 ($2.131M), funding is required to conduct an FOT&E event on the next new AN/SQQ-89A(V)15 ACB production baseline release.

(4) Item Number 1.8 - SURFACE SHIP ENGINEERING SITE (SSES), AN/SQQ-89(V) Prime Vendor's Facility): Procurement of AN/SQQ-89A(V)15 equipment for land-based sites, including the SSES at the prime vendor's facility, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit AN/SQQ-89A(V)15 Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SSES costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. FY 2020 and FY 2021 costs are broken down as follows: In FY 2020 ($2.948M), funding is required to upgrade the equipment at the SSES land-based site. In FY 2021, there is no requirement to upgrade equipment at the SSES land-based site.

(5) Item Number 1.9 - SURFACE COMBATANT SYSTEMS CENTER (SCSC), Wallops Island, VA): Procurement of AN/SQQ-89A(V)15 equipment for land-based sites including the Surface Combatant Systems Center (SCSC) at Wallops Island, VA, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SCSC Wallops costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. FY 2020 and FY 2021 costs are broken down as follows: In FY 2020, there is no requirement to upgrade equipment at the SCSC Wallops Island land-based site. In FY 2021 ($2.027M), funding is required to upgrade the equipment at the SCSC Wallops Island land-based site.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Aggregated Items:** AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15												
1.10) MULTI-FUNCTION TOWED ARRAY (MFTA) MAJOR EQUIPMENT		2020	Lockheed Martin / Syracuse, NY	C / FFP	NAVSEA	Mar 2020	Sep 2021	2	4,134K	Y		Mar 2018
1.10) MULTI-FUNCTION TOWED ARRAY (MFTA) MAJOR EQUIPMENT		2021	Lockheed Martin / Syracuse, NY	C / FFP	NAVSEA	Mar 2021	Sep 2022	1	4,217K	Y		Mar 2018

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	450.769	6.737	17.830	1.189	0.000	1.189	5.897	12.807	1.255	6.221	0.000	502.705
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	450.769	6.737	17.830	1.189	0.000	1.189	5.897	12.807	1.255	6.221	0.000	502.705
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**450.769**	**6.737**	**17.830**	**1.189**	**0.000**	**1.189**	**5.897**	**12.807**	**1.255**	**6.221**	**0.000**	**502.705**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE] See the following:

AN/SQQ-89A(V)15 YEAR-TO-YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:
1st Budget Year - Procurement of equipment.
2nd Budget Year - Ordering of incidental installation material and performance of mandatory advance planning yard design tasks and ship checks, which are required to be budgeted in the year *prior* to the physical installation of equipment. These costs are depicted in the P-3a exhibit with a quantity of "0".
3rd Budget Year - Installation of equipment.

AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on all DDG79-112 Flight IIA ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.

AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

The AN/SQQ-89A(V)15 requires a CNO (Chief of Naval Operations) availability period. The installation is accomplished by Alteration Installation Team (AIT) and shipyard personnel together. The AIT personnel are responsible for the removal of all AN/SQQ-89(V) legacy equipment, addition and modification of foundations, and installation, connectorization, and test of all new AN/SQQ-89A(V)15 equipment. The shipyard personnel are responsible for all rigging activities, hull access cuts, and installation of the Handling & Stowage Gear (H&SG) on non-tailed (i.e. no towed array) DDG51 Class Flight IIA hulls, which is required for the operation of the tactical towed sonar, the Multi-Function Towed Array (MFTA).

AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Upgrade of legacy AN/SQQ-89(V) systems on all DDG79-112 ships to AN/SQQ-89A(V)15 configuration	**Modification Type:** Warfighting Capability	**Related RDT&E PEs:** 0205620N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE												
B Kits												
Recurring												
1.1.1) AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - NonOrganic [6]	32 / 298.050	- / -	1 / 12.139	- / -	- / -	- / -	- / -	1 / 12.807	- / -	- / -	- / -	34 / 322.996
Subtotal: Recurring	*- / 298.050*	*- / -*	*- / 12.139*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 12.807*	*- / -*	*- / -*	*- / 0.000*	*- / 322.996*
Subtotal: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE	*32 / 298.050*	*- / -*	*1 / 12.139*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 12.807*	*- / -*	*- / -*	*- / -*	*34 / 322.996*
Subtotal: Procurement, All Modification Items	*- / 298.050*	*- / -*	*- / 12.139*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 12.807*	*- / -*	*- / -*	*- / 0.000*	*- / 322.996*
Installation												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE	- / 152.719	- / 6.737	- / 5.691	- / 1.189	- / 0.000	- / 1.189	- / 5.897	- / 0.000	- / 1.255	- / 6.221	- / 0.000	- / 179.709
Subtotal: Installation	*- / 152.719*	*- / 6.737*	*- / 5.691*	*- / 1.189*	*- / -*	*- / 1.189*	*- / 5.897*	*- / -*	*- / 1.255*	*- / 6.221*	*- / 0.000*	*- / 179.709*
Total												
Total Cost (Procurement + Support + Installation)	**450.769**	**6.737**	**17.830**	**1.189**	**0.000**	**1.189**	**5.897**	**12.807**	**1.255**	**6.221**	**0.000**	**502.705**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: Manassas, VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Mar 2020			Mar 2023		
Delivery Dates		Sep 2021			Sep 2024		

Installation Information

Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	30 / 152.719	1 / 6.737	1 / 5.691	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	32 / 165.147
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	0 / 1.189	0 / 0.000	0 / 1.189	1 / 5.897	- / -	- / -	- / -	0 / 0.000	1 / 7.086
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.255	1 / 6.221	0 / 0.000	1 / 7.476
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	30 / 152.719	1 / 6.737	1 / 5.691	0 / 1.189	0 / 0.000	0 / 1.189	1 / 5.897	- / -	0 / 1.255	1 / 6.221	0 / 0.000	34 / 179.709

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	30	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	34
Out	30	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	34

Footnotes:

(6) AN/SQQ-89A(V)15 installation funding is phased across two budget years. Performance of planning yard design tasks, ship checks, and the ordering of incidental installation material, depicted in the P-3a exhibit with a quantity of "0", are budgeted in the year *prior* to the actual physical installation of equipment. In the second budget year, costs associated with the actual physical installation of equipment on ship

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

are shown with a quantity other than "0". FY 2021 installation costs depicted with a quantity of "0" are derived as follows: One (1) set of planning yard design tasks/ship checks/installation material (required one year prior to physical installation shown in FY 2022) * $1.189M per set = $1.189M.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	40.693	23.785	12.764	31.954	0.000	31.954	28.964	23.391	11.307	16.655	6.572	196.085
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	40.693	23.785	12.764	31.954	0.000	31.954	28.964	23.391	11.307	16.655	6.572	196.085
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**40.693**	**23.785**	**12.764**	**31.954**	**0.000**	**31.954**	**28.964**	**23.391**	**11.307**	**16.655**	**6.572**	**196.085**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE] See the following:

AN/SQQ-89A(V)15 YEAR-TO-YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:
1st Budget Year - Procurement of equipment.
2nd Budget Year - Ordering of incidental installation material and performance of mandatory advance planning yard design tasks and ship checks, which are required to be budgeted in the year *prior* to the physical installation of equipment. These costs are depicted in the P-3a exhibit with a quantity of "0".
3rd Budget Year - Installation of equipment.

AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on select DDG51-78 FLT I/II ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship. NOTE: Procurement of an AN/SQQ-89A(V)15 for DDG51 Class FLT I/II ships does not require the OK-410 Handling & Stowage Group (H&SG) subsystem as needed with DDG51 Class FLT IIA ships.

AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

The AN/SQQ-89A(V)15 requires a CNO (Chief of Naval Operations) availability period. The installation is accomplished by Alteration Installation Team (AIT) and shipyard personnel together. The AIT personnel are responsible for the removal of all AN/SQQ-89(V) legacy equipment, addition and modification of foundations, and installation, connectorization, and test of all new AN/SQQ-89A(V)15 equipment. The shipyard personnel are responsible for all rigging activities and hull access cuts.

AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Upgrade of legacy AN/SQQ-89(V) systems on select DDG51-78 ships to AN/SQQ-89A(V)15 configuration	**Modification Type:** Warfighting Capability	**Related RDT&E PEs:** 0205620N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE												
B Kits												
Recurring												
1.1.1) AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - NonOrganic (7)	3 / 28.420	2 / 19.231	1 / 10.438	2 / 21.294	- / -	2 / 21.294	2 / 21.720	1 / 11.077	- / -	1 / 11.525	- / -	12 / 123.705
Subtotal: Recurring	*- / 28.420*	*- / 19.231*	*- / 10.438*	*- / 21.294*	*- / -*	*- / 21.294*	*- / 21.720*	*- / 11.077*	*- / -*	*- / 11.525*	*- / 0.000*	*- / 123.705*
Subtotal: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE	*3 / 28.420*	*2 / 19.231*	*1 / 10.438*	*2 / 21.294*	*- / -*	*2 / 21.294*	*2 / 21.720*	*1 / 11.077*	*- / -*	*1 / 11.525*	*- / -*	*12 / 123.705*
Subtotal: Procurement, All Modification Items	*- / 28.420*	*- / 19.231*	*- / 10.438*	*- / 21.294*	*- / -*	*- / 21.294*	*- / 21.720*	*- / 11.077*	*- / -*	*- / 11.525*	*- / 0.000*	*- / 123.705*
Installation												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE	- / 12.273	- / 4.554	- / 2.326	- / 10.660	- / 0.000	- / 10.660	- / 7.244	- / 12.314	- / 11.307	- / 5.130	- / 6.572	- / 72.380
Subtotal: Installation	*- / 12.273*	*- / 4.554*	*- / 2.326*	*- / 10.660*	*- / -*	*- / 10.660*	*- / 7.244*	*- / 12.314*	*- / 11.307*	*- / 5.130*	*- / 6.572*	*- / 72.380*
Total												
Total Cost (Procurement + Support + Installation)	**40.693**	**23.785**	**12.764**	**31.954**	**0.000**	**31.954**	**28.964**	**23.391**	**11.307**	**16.655**	**6.572**	**196.085**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: Manassas, VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020	Mar 2021	Mar 2022			Mar 2025
Delivery Dates	Sep 2020	Sep 2021	Sep 2022	Sep 2023			Sep 2026

Installation Information

Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 12.273	1 / 4.554	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 16.827
FY 2019	- / -	- / -	0 / 2.326	2 / 9.476	0 / 0.000	2 / 9.476	- / -	- / -	- / -	- / -	0 / 0.000	2 / 11.802
FY 2020	- / -	- / -	- / -	0 / 1.184	0 / 0.000	0 / 1.184	1 / 4.833	- / -	- / -	- / -	0 / 0.000	1 / 6.017
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.411	2 / 9.860	- / -	- / -	0 / 0.000	2 / 12.271
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.454	2 / 10.058	- / -	0 / 0.000	2 / 12.512
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.249	1 / 5.130	0 / 0.000	1 / 6.379
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.572	1 / 6.572
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 12.273	1 / 4.554	0 / 2.326	2 / 10.660	0 / 0.000	2 / 10.660	1 / 7.244	2 / 12.314	2 / 11.307	1 / 5.130	1 / 6.572	12 / 72.380

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	1	-	-	-	-	-	-	1	1	-	-	-	1	-	-	1	1	-	-	1	1	-	-	-	1	-	1	12
Out	1	1	-	-	1	-	-	-	-	-	-	1	1	-	-	-	1	-	-	1	1	-	-	1	1	-	-	-	1	1	12

Footnotes:

(7) AN/SQQ-89A(V)15 installation funding is phased across two budget years. Performance of planning yard design tasks, ship checks, and the ordering of incidental installation material, depicted in the P-3a exhibit with a quantity of "0", are budgeted in the year *prior* to the actual physical installation of equipment. In the second budget year, costs associated with the actual physical installation of equipment on ship are shown with a quantity other than "0". FY 2020 installation costs depicted with a quantity of "0" are derived as follows: Two (2) sets of planning yard design tasks/ship checks/installation material (required one

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

year prior to physical installation shown in FY 2021) * $1.163M per set = $2.326M. FY 2021 installation costs depicted with a quantity of "0" are derived as follows: One (1) set of planning yard design tasks/ship checks/installation material (required one year prior to physical installation shown in FY 2022) * $1.184M per set = $1.184M.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	52.619	15.301	16.007	16.329	0.000	16.329	16.655	16.988	17.326	4.127	3.704	159.056
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	52.619	15.301	16.007	16.329	0.000	16.329	16.655	16.988	17.326	4.127	3.704	159.056
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**52.619**	**15.301**	**16.007**	**16.329**	**0.000**	**16.329**	**16.655**	**16.988**	**17.326**	**4.127**	**3.704**	**159.056**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE] See the following:

AN/SQQ-89A(V)15 YEAR-TO-YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:
1st Budget Year - Procurement of equipment.
2nd Budget Year - Ordering of incidental installation material and performance of mandatory advance planning yard design tasks and ship checks, which are required to be budgeted in the year *prior* to the physical installation of equipment. These costs are depicted in the P-3a exhibit with a quantity of "0".
3rd Budget Year - Installation of equipment.

AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of a subset of AN/SQQ-89A(V)15 equipment, specifically the Multi-Function Towed Array (MFTA) and Handling & Stowage Group (H&SG), for subsequent installation on all DDG113-132 ships during their Post Delivery Availability (PDA) or Post Shakedown Availability (PSA) periods, to upgrade the ASW sonar suite from an AN/SQQ-89(V)15 configuration to the AN/SQQ-89A(V)15 configuration.

AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB6IN INSTALLATION: Physical installation of the H&SG and MFTA on DDG113-132 ships during their PDA or PSA period which includes the installation of an egress, under-deck stiffeners, cables, bulkheads, opening and closing of the transom, the winch, levelwind, fairlead and control station, decking, painting, and final system testing, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Upgrade of in-line AN/SQQ-89(V)15 on all DDG113-132 ships to AN/SQQ-89A(V)15 configuration	**Modification Type:** Warfighting Capability	**Related RDT&E PEs:** 0205620N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE												
B Kits												
Recurring												
1.1.1) AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE - NonOrganic [8]	8 / 43.633	2 / 11.074	2 / 12.267	2 / 12.514	- / -	2 / 12.514	2 / 12.764	2 / 13.020	2 / 13.280	- / -	- / -	20 / 118.552
Subtotal: Recurring	*- / 43.633*	*- / 11.074*	*- / 12.267*	*- / 12.514*	*- / -*	*- / 12.514*	*- / 12.764*	*- / 13.020*	*- / 13.280*	*- / -*	*- / 0.000*	*- / 118.552*
Subtotal: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE	*8 / 43.633*	*2 / 11.074*	*2 / 12.267*	*2 / 12.514*	*- / -*	*2 / 12.514*	*2 / 12.764*	*2 / 13.020*	*2 / 13.280*	*- / -*	*- / -*	*20 / 118.552*
Subtotal: Procurement, All Modification Items	*- / 43.633*	*- / 11.074*	*- / 12.267*	*- / 12.514*	*- / -*	*- / 12.514*	*- / 12.764*	*- / 13.020*	*- / 13.280*	*- / -*	*- / 0.000*	*- / 118.552*
Installation												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE	- / 8.986	- / 4.227	- / 3.740	- / 3.815	- / 0.000	- / 3.815	- / 3.891	- / 3.968	- / 4.046	- / 4.127	- / 3.704	- / 40.504
Subtotal: Installation	*- / 8.986*	*- / 4.227*	*- / 3.740*	*- / 3.815*	*- / -*	*- / 3.815*	*- / 3.891*	*- / 3.968*	*- / 4.046*	*- / 4.127*	*- / 3.704*	*- / 40.504*
Total												
Total Cost (Procurement + Support + Installation)	**52.619**	**15.301**	**16.007**	**16.329**	**0.000**	**16.329**	**16.655**	**16.988**	**17.326**	**4.127**	**3.704**	**159.056**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE

Manufacturer Information

Manufacturer Name: Lockheed Martin — Manufacturer Location: Syracuse, NY

Administrative Leadtime *(in Months)*: 3 — Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020					
Delivery Dates	Sep 2020	Sep 2021					

Manufacturer Name: TBD (Competitive Procurement) — Manufacturer Location: TBD (Competitive Procurement)

Administrative Leadtime *(in Months)*: 3 — Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Mar 2021	Mar 2022	Mar 2023	Mar 2024	
Delivery Dates			Sep 2022	Sep 2023	Sep 2024	Sep 2025	

Installation Information

Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	4 / 8.986	2 / 4.227	2 / 3.287	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 16.500
FY 2019	- / -	- / -	0 / 0.453	2 / 3.354	0 / 0.000	2 / 3.354	- / -	- / -	- / -	- / -	0 / 0.000	2 / 3.807
FY 2020	- / -	- / -	- / -	0 / 0.461	0 / 0.000	0 / 0.461	2 / 3.422	- / -	- / -	- / -	0 / 0.000	2 / 3.883
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.469	2 / 3.490	- / -	- / -	0 / 0.000	2 / 3.959
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.478	2 / 3.560	- / -	0 / 0.000	2 / 4.038
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.486	2 / 3.632	0 / 0.000	2 / 4.118
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.495	2 / 3.704	2 / 4.199
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	4 / 8.986	2 / 4.227	2 / 3.740	2 / 3.815	0 / 0.000	2 / 3.815	2 / 3.891	2 / 3.968	2 / 4.046	2 / 4.127	2 / 3.704	20 / 40.504

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 3 / AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE

Installation Information

Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG113-132 MFTA/HANDLER UPGRADE

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	4	-	1	1	-	-	-	1	1	-	1	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	-	1	1	2	20
Out	4	-	1	1	-	-	-	1	1	-	1	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	-	1	1	2	20

Footnotes:

(8) AN/SQQ-89A(V)15 installation funding is phased across two budget years. Performance of planning yard design tasks, ship checks, and the ordering of incidental installation material, depicted in the P-3a exhibit with a quantity of "0", are budgeted in the year *prior* to the actual physical installation of equipment. In the second budget year, costs associated with the actual physical installation of equipment on ship are shown with a quantity other than "0". FY 2020 installation costs depicted with a quantity of "0" are derived as follows: Two (2) sets of planning yard design tasks/ship checks/installation material (required one year prior to physical installation shown in FY 2021) * $0.2265M per set = $0.453M. FY 2021 installation costs depicted with a quantity of "0" are derived as follows: Two (2) sets of planning yard design tasks/ship checks/installation material (required one year prior to physical installation shown in FY 2022) * $0.2305M per set = $0.461M.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	83.675	35.842	46.211	44.737	0.000	44.737	49.828	51.128	78.183	78.210	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	83.675	35.842	46.211	44.737	0.000	44.737	49.828	51.128	78.183	78.210	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**83.675**	**35.842**	**46.211**	**44.737**	**0.000**	**44.737**	**49.828**	**51.128**	**78.183**	**78.210**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH] See the following:

AN/SQQ-89A(V)15 YEAR-TO-YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:
1st Budget Year - Procurement of equipment.
2nd Budget Year - Ordering of incidental installation material and performance of mandatory advance planning yard design tasks and ship checks, which are required to be budgeted in the year *prior* to the physical installation of equipment. These costs are depicted in the P-3a exhibit with a quantity of "0".
3rd Budget Year - Installation of equipment.

AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB400 PROCUREMENT: Leveraging the submarine community's Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) process, the AN/SQQ-89A(V)15 Tech Refresh program procures upgraded software/hardware technology for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15. This process has proven to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat to ensure systems remain effective well into the 21st century. Studies of the submarine and surface ASW technology show that system upgrades are most critical 6-9 years after initial installation of the AN/SQQ-89A(V)15, as failure rates within this period begin to rise. Establishing a stable technology refresh program will ensure the Fleet maintains critical Undersea Warfare capability (threat-pacing improvements) and productivity (Increased Operational Availability (Ao)) while reducing the Total Ownership Cost (TOC) to the Navy.

AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB6IN INSTALLATION: Funding is for the physical installation of the AN/SQQ-89A(V)15 Technology Refresh upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Technology refresh of previously fielded AN/SQQ-89A(V)15 USW Combat Systems	**Modification Type:** Warfighting Capability	**Related RDT&E PEs:** 0205620N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH												
B Kits												
Recurring												
1.1.1) AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - NonOrganic (9)	14 / 62.398	6 / 28.388	8 / 38.125	6 / 29.166	- / -	6 / 29.166	6 / 29.749	7 / 35.401	12 / 61.901	11 / 57.878	Continuing	Continuing
Subtotal: Recurring	*- / 62.398*	*- / 28.388*	*- / 38.125*	*- / 29.166*	*- / -*	*- / 29.166*	*- / 29.749*	*- / 35.401*	*- / 61.901*	*- / 57.878*	*Continuing*	*Continuing*
Subtotal: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH	*14 / 62.398*	*6 / 28.388*	*8 / 38.125*	*6 / 29.166*	*- / -*	*6 / 29.166*	*6 / 29.749*	*7 / 35.401*	*12 / 61.901*	*11 / 57.878*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 62.398*	*- / 28.388*	*- / 38.125*	*- / 29.166*	*- / -*	*- / 29.166*	*- / 29.749*	*- / 35.401*	*- / 61.901*	*- / 57.878*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH	- / 21.277	- / 7.454	- / 8.086	- / 15.571	- / 0.000	- / 15.571	- / 20.079	- / 15.727	- / 16.282	- / 20.332	- / 61.450	- / 186.258
Subtotal: Installation	*- / 21.277*	*- / 7.454*	*- / 8.086*	*- / 15.571*	*- / -*	*- / 15.571*	*- / 20.079*	*- / 15.727*	*- / 16.282*	*- / 20.332*	*- / 61.450*	*- / 186.258*
Total												
Total Cost (Procurement + Support + Installation)	**83.675**	**35.842**	**46.211**	**44.737**	**0.000**	**44.737**	**49.828**	**51.128**	**78.183**	**78.210**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: Manassas, VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 17

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Aug 2020	Aug 2021	Aug 2022	Aug 2023	Aug 2024	Aug 2025	Aug 2026

Installation Information

Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	8 / 21.277	3 / 7.454	3 / 6.728	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 35.459
FY 2019	- / -	- / -	0 / 1.358	6 / 13.728	0 / 0.000	6 / 13.728	- / -	- / -	- / -	- / -	0 / 0.000	6 / 15.086
FY 2020	- / -	- / -	- / -	0 / 1.843	0 / 0.000	0 / 1.843	8 / 18.672	- / -	- / -	- / -	0 / 0.000	8 / 20.515
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.407	6 / 14.286	- / -	- / -	0 / 0.000	6 / 15.693
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.441	6 / 14.567	- / -	0 / 0.000	6 / 16.008
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.715	7 / 17.334	0 / 0.000	7 / 19.049
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.998	12 / 30.310	12 / 33.308
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 31.140	11 / 31.140
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
Total	8 / 21.277	3 / 7.454	3 / 8.086	6 / 15.571	0 / 0.000	6 / 15.571	8 / 20.079	6 / 15.727	6 / 16.282	7 / 20.332	23 / 61.450	70 / 186.258

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	8	-	1	1	1	-	1	2	-	1	2	2	1	1	2	3	2	-	2	2	2	-	2	2	2	-	2	3	2	23	70
Out	8	-	1	1	1	-	1	2	-	1	2	2	1	1	2	3	2	-	2	2	2	-	2	2	2	-	2	3	2	23	70

Footnotes:

(9) AN/SQQ-89A(V)15 installation funding is phased across two budget years. Performance of planning yard design tasks, ship checks, and the ordering of incidental installation material, depicted in the P-3a exhibit with a quantity of "0", are budgeted in the year *prior* to the actual physical installation of equipment. In the second budget year, costs associated with the actual physical installation of equipment on ship are shown with a quantity other than "0". FY 2020 installation costs depicted with a quantity of "0" are derived as follows: Six (6) sets of planning yard design tasks/ship checks/installation material (required one

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	**Modification Number / Title:** 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

year prior to physical installation shown in FY 2021) * $0.2263M per set = $1.358M. FY 2021 installation costs depicted with a quantity of "0" are derived as follows: Eight (8) sets of planning yard design tasks/ ship checks/installation material (required one year prior to physical installation shown in FY 2022) * $0.2304M per set = $1.843M.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	616.465	331.338	367.620	374.737	0.000	374.737	422.187	481.140	497.198	516.966	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	616.465	331.338	367.620	374.737	0.000	374.737	422.187	481.140	497.198	516.966	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**616.465**	**331.338**	**367.620**	**374.737**	**0.000**	**374.737**	**422.187**	**481.140**	**497.198**	**516.966**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	20.540	22.295	21.140	-	21.140	19.044	16.342	25.102	24.795	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY 2021 reflects a net increase of $7.117 million from FY 2020 to FY 2021. Increase primarily associated with the first installation of the OHIO Class Large Vertical Array (LVA).

MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program procures submarine systems and equipment for installation on all classes of submarines to maintain clear acoustical, tactical, and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization, and contact following. All future acoustic upgrades of Acoustic Rapid COTS Insertion (A-RCI) equipment are incorporated into this budget item. Future procurements, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Strike Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. A-RCI is a multi-phased, evolutionary development effort geared toward addressing acoustic superiority issues through the rapid introduction of interim products applicable to SSN 688, 688I Flight, SSN21, SSGN, VIRGINIA Class, and OHIO Class Submarines. A-RCI Phase II provided towed array processing improvements; A-RCI Phase III provides spherical array processing improvements, and A-RCI Phase IV provides AN/BSY-1 High Frequency Upgrades for SSN 688I, SSGN, and SEAWOLF Classes. As part of Navy's plan to maintain acoustic superiority for in-service submarines, reduce obsolescence, and provide increased capability, the A-RCI program will modernize and sustain approximately 8-12 SSNs and 2-3 SSBNs per year through executing bi-annual software Advanced Processing Builds (APBs) and bi-annual hardware Technical Insertions (TIs). A-RCI annual funding varies based on the number of modernizations funded as well as the particular class of submarine being modernized.

Towed System procurements of TB-29C and TB-34A provide reliability improvements to maintain Acoustic Superiority, increase the service life, reduce failures, and maintain the inventory of arrays available for fleet use. Towed Array Refurbishment & Reliability Upgrades sustain current in-service TB-16/34 Fatline and TB-23/29A Thinline towed arrays. Towed System procurements provide upgrade/support for OK-276, OK-634, OK-542 and OA-9070 Series Towed Array Handlers installed on SSN688, SSN 688I, SSN21, SSGN, VIRGINIA Class, and OHIO Class Submarines.

Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability in high contact density environments experienced in the littorals. Procurement of VA Unique Sensors sustains unique hull sensor systems for the VA platforms under the Critical Transducer Program as VIRGINIA Class submarines transition into fleet service.

Procurement of the OHIO Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the OHIO class submarines. SSBN systems will be approximately half the width of their SSN counterparts. This variance reflects the difference in mission, expected environment, and requirements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Procurement of the VIRGINIA Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the VIRGINIA class submarines. SSN systems will be approximately twice the width of their SSBN counterparts. This variance reflects the difference in mission, expected environment, and requirements.

Procurement of the High Frequency Sail Array (HFSA) provides high frequency active and passive capability supporting ASW and ASUW for SSNs, and contact avoidance for SSNs and SSBNs. This capability enables close in situational awareness with high bearing accuracy. HFSA improves situational awareness and tactical control in high -density contact areas, of particular importance for Pacific Fleet SSBNs based at Bangor, WA inside the Puget Sound with three major commercial shipping ports.

Procurement of hydrophones, transducers, cables, associated Out-Board Electronics bottles (OBE), and acoustic windows for In-Service Undersea Warfare Sonars on all classes of submarines are required to support units in the fleet on a replacement basis, at regularly scheduled ship overhauls, and at interim availabilities when units are defective, and for upgrades.

Installation funds are for actual hardware installations during shipyard and pier-side availabilities. Procurements support a 12-24 month lead-time for installations.

[P40A / SA102 TOWED SYSTEMS]: Procures TB-34A Fatline and TB-29C Thinline Arrays to provide increased acoustic capability and reliability to the fleet. The program supports refurbishment/upgrades and reliability improvements to TB-16 series, TB-23, TB-29A to maintain in-service Towed Array inventory and increased array availability. Reliability improvements include new telemetry, hose material, improved internal connectors, hydrophones, tow cables, Vibration Isolation Modules (VIMS), and Heading Sensors.

[P40A / SA105 SONAR SUPPORT EQUIPMENT]: Funds provided to procure BQN-17(A) and associated equipment.

[P40A / SA106 HULL SENSORS]: Procurement of Low Cost Conformal Array (LCCA), which provides enhanced situational awareness and collision avoidance capability, Large Vertical Array (LVA), which provides improved detection and enhanced tactical situational awareness capability, and VA Unique Sensors required to sustain unique hull sensor systems for the VA platforms under the Critical Transducer Program.

[P40A / SA201 BLOCK CHANGES]: Minor Engineering Change Proposals (ECP's) and hardware changes affecting all classes of submarines are procured through this line. Funding will be used to support non-recurring first article test efforts associated with the changing COTS environment as well as Reliability, Maintainability, and Availability modifications requested by the Fleet. This line also supports the procurement of hardware necessary to implement the ECP's into the System or end item being procured.

[P40A / SA202 PRODUCTION/ENGINEERING SUPPORT]: Funding supports the procurement of Acoustics Upgrades equipment, Towed Systems hardware, Large Vertical Array in-board processing equipment, Large Vertical Array shipyard installation support equipment, and Low Cost Conformal Array engineering and production to support the reduced weight variant.

[P40A / SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT]: Funding procures various Towed Array test equipment simulators and handling system/stowage tube inspection test equipment.

[P40A / SA302 OP TRAINER UPGRADES]: Funding procures hardware upgrades and production engineering for Acoustic Upgrades operational trainer sites.

[P40A / SA303 COTS SUPPORTABILITY UPGRADES]: Provides for Technology Refresh/Insertion for A-RCI kits. Tech Refresh provides for Software and Hardware updates to accommodate shifts in technology to the execution procurement years' "current state-of-the-practice" hardware. A-RCI has already undergone several technology insertion phases to accommodate integrating Advanced Processing Builds (APBs). Updates are necessary for signal and display processing hardware as APBs are introduced or as commercial support for the hardware is phased out. Tech Insertion procures the hardware necessary to upgrade and back fit the A-RCI kits. When A-RCI systems are being upgraded to subsequent phases of A-RCI, signal processing and display hardware will be procured from this line to accommodate common technology consistent with the APB being implemented in the year of introduction. In future years, requirements include additional equipment in technology insertion to prevent COTS hardware from becoming unsupportable/obsolete. Funding also supports the procurement and engineering for COTS Underwater Comms.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P40A / INTEL, SURVEILLANCE, AND RECONNAISSANCE]: In coordination with the Digital Warfare Office (DWO), PMS401 has received an allocation of FY19 funding via Above Threshold Reprogramming (ATR) to support Overseas Contingency Operations (OCO) requirements. The reprogramming improves the Intelligence, Surveillance, and Reconnaissance (ISR) capabilities of the DoD by addressing Combatant Command (COCOM) ISR gaps. These actions are determined to be necessary in the national interest.

[P40A / SA401 INITIAL TRAINING]: Provides for initial training curriculum development, training management materials, exercise control group development, pilot services, and services to the Fleet.

[P40A / SA900 CONSULTING SERVICES]: Includes specification validation, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance slips, ILS planning, and coordination of GFI. Additional support will include production planning, business case analysis, technical refresh and insertion planning and market analysis to review implementation strategies for procurement of current year "state of the practice" hardware in Acoustics programs. Consulting services will also provide production monitoring, installation planning and coordination support.

[P40A - 2 / PU100 SONAR SWITCHES AND TRANSDUCERS]: Included in this line are procurements of transducers, hydrophones, windows, cables, accelerometers, Out-Board Electronics (OBE), domes and their associated mounting hardware, and other support equipment and materials for the following Undersea Warfare Sonars: BSY-1, BSY-2, BQQ-5, BQQ-6, BQQ-10, BQG-5, BQS-15, BQS-14A, WQC-2, WLR-9/12, BQN-13, BQN-17, BQA-8, BQH-1 and BQS-25.

[P40A - 2 / PU200 ENGINEERING CHANGES]: Funds ECPs, Value Engineering awards, and hardware changes affecting the SSN 688, 688I, SEAWOLF, SSBN 726 (TRIDENT), SSGN/SSBN, and VA Class submarines.

[P40A - 2 / PU300 PROGRAM SUPPORT]: Supports the procurement of equipment of sonar hydrophones, transducers, cables, Out-Board Electronics (OBEs), and acoustic windows for In-Service Undersea Warfare Sonars.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment

ID Code (A=Service Ready, B=Not Service Ready): B | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	SSN Acoustics				- / 301.609	- / 155.685	- / 139.130	- / 130.576	- / -	- / 130.576
P-40a	Sonar Switches and Transducers				- / 20.038	- / 12.562	- / 13.638	- / 13.915	- / -	- / 13.915
P-3a	1 / SA101 SSBN LEGACY INTERFACE HARDWARE (SHIPALT)				- / 0.000	- / 11.652	- / 27.527	- / 20.902	- / 0.000	- / 20.902
P-3a	2 / SA106 LOW COST CONFORMAL ARRAY KITS (SHIPALT)				- / 26.208	- / 3.680	- / 5.007	- / 14.044	- / 0.000	- / 14.044
P-3a	3 / SA106 HIGH FREQUENCY SAIL ARRAY (SHIPALT)				- / 9.963	- / 6.120	- / 8.405	- / 6.492	- / 0.000	- / 6.492
P-3a	4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 0.000	- / 18.525	- / 18.896	- / 29.400	- / 0.000	- / 29.400
P-3a	5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 0.000	- / 0.000	- / 43.405	- / 44.273	- / 0.000	- / 44.273
P-3a	6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 61.110	- / 62.603	- / 55.560	- / 11.974	- / 0.000	- / 11.974
P-3a	7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 16.264	- / 21.283	- / 4.788	- / 0.000	- / 4.788
P-3a	8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 24.315	- / 3.415	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 120.547	- / 17.075	- / 9.291	- / 79.363	- / 0.000	- / 79.363
P-3a	10 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) (SHIPALT)				- / 52.675	- / 23.757	- / 25.478	- / 19.010	- / 0.000	- / 19.010
P-40	**Total Gross/Weapon System Cost**				**- / 616.465**	**- / 331.338**	**- / 367.620**	**- / 374.737**	**- / 0.000**	**- / 374.737**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	SSN Acoustics				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Sonar Switches and Transducers				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / SA101 SSBN LEGACY INTERFACE HARDWARE (SHIPALT)				- / 5.046	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 65.127
P-3a	2 / SA106 LOW COST CONFORMAL ARRAY KITS (SHIPALT)				- / 14.325	- / 25.239	- / 29.807	- / 30.401	Continuing	Continuing
P-3a	3 / SA106 HIGH FREQUENCY SAIL ARRAY (SHIPALT)				- / 2.249	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 33.229
P-3a	4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 29.989	- / 30.588	- / 31.200	- / 31.824	Continuing	Continuing
P-3a	5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 65.077	- / 66.379	- / 67.706	- / 116.983	Continuing	Continuing
P-3a	6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 43.149	- / 91.678	- / 40.829	- / 5.184	Continuing	Continuing
P-3a	7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 42.335
P-3a	8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 9.666	- / 13.555	- / 13.826	- / 3.845	Continuing	Continuing
P-3a	9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 67.655	- / 14.786	- / 70.394	- / 119.238	Continuing	Continuing

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	10 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) (SHIPALT)				- / 27.803	- / 42.202	- / 30.935	- / 28.130	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 422.187**	**- / 481.140**	**- / 497.198**	**- / 516.966**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY 2021 marks the first installation of the OHIO Class Large Vertical Array (LVA) which is the primary driver of increased funding in this fiscal year. The completion of SSBN Legacy Interface Hardware procurement in FY 2021 supports remaining Engineering Change Proposals (ECPs) and hardware changes necessary to address significantly expanded power and infrastructure driven by required capability improvements. These funds support the conversion of the SSBN from a legacy Sonar system to the A-RCI model requiring upgrades to the power and infrastructure of the platform. Funds also support the following procurement requirements to support submarine modernizations: Acoustic Rapid COTS Insertion (A-RCI) equipment (8 VIRGINIA Class and 1 SSBN); TB-34A Fatline (5) and TB-29C Thinline (5) Towed Arrays; Towed Array refurbishment & reliability upgrades to sustain current in-service TB-16/34 Fatline and TB-23/29A Thinline arrays; OK-276, OK-634, OK-542, and OA-9070 Series Towed Array Handlers; HFSA (1) for SSBN, LVA (1 SSBN, 1 VA), LCCA (2 SSN); and various hull sensors, transducers, and associated equipment for all classes of In-Service submarines.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment	Aggregated Items Title: SSN Acoustics

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) SA102 TOWED SYSTEMS																				
1.1) TB-34A FATLINE TOWED ARRAYS	B		1,263K	21	26.517	1,299K	6	7.794	1,325K	5	6.624	1,351K	5	6.757	-	-	-	1,351K	5	6.757
1.2) TB-29C THIN LINE TOWED ARRAYS	B		4,253K	19	80.808	4,370K	8	34.957	4,457K	7	31.199	4,546K	5	22.731	-	-	-	4,546K	5	22.731
1.3) TOWED ARRAY REFURBISHMENT & UPGRADES (1)	A		-	-	61.513	-	-	27.385	-	-	29.556	-	-	27.902	-	-	-	-	-	27.902
1.4) TOWED ARRAY HANDLER SYSTEM UPGRADE	A		-	-	14.964	-	-	7.708	-	-	7.862	-	-	8.019	-	-	-	-	-	8.019
Subtotal: 1) SA102 TOWED SYSTEMS			**-**	**-**	***183.802***	**-**	**-**	***77.844***	**-**	**-**	***75.241***	**-**	**-**	***65.409***	**-**	**-**	**-**	**-**	**-**	***65.409***
2) SA105 SONAR SUPPORT EQUIPMENT																				
2.1) BQN-17	A		-	-	1.792	-	-	0.923	-	-	0.941	-	-	0.960	-	-	-	-	-	0.960
Subtotal: 2) SA105 SONAR SUPPORT EQUIPMENT			**-**	**-**	***1.792***	**-**	**-**	***0.923***	**-**	**-**	***0.941***	**-**	**-**	***0.960***	**-**	**-**	**-**	**-**	**-**	***0.960***
3) SA106 HULL SENSORS																				
3.1) VA UNIQUE SENSOR	A		-	-	10.918	-	-	5.623	-	-	5.735	-	-	5.850	-	-	-	-	-	5.850
Subtotal: 3) SA106 HULL SENSORS			**-**	**-**	***10.918***	**-**	**-**	***5.623***	**-**	**-**	***5.735***	**-**	**-**	***5.850***	**-**	**-**	**-**	**-**	**-**	***5.850***
4) SA201 BLOCK CHANGES																				
4.1) TOWED SYSTEMS ECP'S	A		-	-	3.436	-	-	2.639	-	-	1.805	-	-	1.841	-	-	-	-	-	1.841
4.2) ACOUSTICS	A		-	-	6.104	-	-	5.385	-	-	3.208	-	-	3.272	-	-	-	-	-	3.272
Subtotal: 4) SA201 BLOCK CHANGES			**-**	**-**	***9.540***	**-**	**-**	***8.024***	**-**	**-**	***5.013***	**-**	**-**	***5.113***	**-**	**-**	**-**	**-**	**-**	***5.113***
5) SA202 PRODUCTION/ENGINEERING SUPPORT																				
5.1) ACOUSTICS	A		-	-	6.399	-	-	5.644	-	-	3.362	-	-	3.429	-	-	-	-	-	3.429
5.2) TOWED ARRAYS/HANDLING EQUIPMENT	A		-	-	6.284	-	-	4.825	-	-	3.301	-	-	3.367	-	-	-	-	-	3.367
5.3) LARGE VERTICAL ARRAY	A		-	-	-	-	-	-	-	-	2.000	-	-	2.040	-	-	-	-	-	2.040
Subtotal: 5) SA202 PRODUCTION/ ENGINEERING SUPPORT			**-**	**-**	***12.683***	**-**	**-**	***10.469***	**-**	**-**	***8.663***	**-**	**-**	***8.836***	**-**	**-**	**-**	**-**	**-**	***8.836***
6) SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT																				
6.1) TOWED ARRAY UNIQUE TEST EQUIPMENT	A		-	-	2.543	-	-	1.953	-	-	1.336	-	-	1.363	-	-	-	-	-	1.363
Subtotal: 6) SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT			**-**	**-**	***2.543***	**-**	**-**	***1.953***	**-**	**-**	***1.336***	**-**	**-**	***1.363***	**-**	**-**	**-**	**-**	**-**	***1.363***

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment	Aggregated Items Title: SSN Acoustics

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years Unit Cost ($)	Prior Years Qty (Each)	Prior Years Total Cost ($ M)	FY 2019 Unit Cost ($)	FY 2019 Qty (Each)	FY 2019 Total Cost ($ M)	FY 2020 Unit Cost ($)	FY 2020 Qty (Each)	FY 2020 Total Cost ($ M)	FY 2021 Base Unit Cost ($)	FY 2021 Base Qty (Each)	FY 2021 Base Total Cost ($ M)	FY 2021 OCO Unit Cost ($)	FY 2021 OCO Qty (Each)	FY 2021 OCO Total Cost ($ M)	FY 2021 Total Unit Cost ($)	FY 2021 Total Qty (Each)	FY 2021 Total Total Cost ($ M)
7) SA302 OP TRAINER UPGRADES																				
7.1) OP TRAINER GFE	A		-	-	2.246	-	-	1.157	-	-	1.180	-	-	1.204	-	-	-	-	-	1.204
Subtotal: 7) SA302 OP TRAINER UPGRADES			**-**	**-**	***2.246***	**-**	**-**	***1.157***	**-**	**-**	***1.180***	**-**	**-**	***1.204***	**-**	**-**	**-**	**-**	**-**	***1.204***
8) SA303 COTS SUPPORTABILITY UPGRADES																				
8.1) INSTALL SUPPORT	A		-	-	3.099	-	-	2.732	-	-	1.628	-	-	1.661	-	-	-	-	-	1.661
8.2) AEMP	A		-	-	11.229	-	-	5.783	-	-	5.899	-	-	6.017	-	-	-	-	-	6.017
8.3) COTS UWC ENGINEERING SUPPORT	A		-	-	3.563	-	-	3.142	-	-	1.872	-	-	1.909	-	-	-	-	-	1.909
8.4) COTS TECH INSERTION	A		-	-	39.432	-	-	20.309	-	-	20.715	-	-	21.129	-	-	-	-	-	21.129
8.5) SHIPYARD INSTALLATION INDUSTRIAL SUPPORT	A		-	-	11.540	-	-	10.178	-	-	6.062	-	-	6.183	-	-	-	-	-	6.183
8.6) INTEL, SURVEILLANCE, AND RECONNAISSANCE	A		-	-	-	-	-	2.100	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) SA303 COTS SUPPORTABILITY UPGRADES			**-**	**-**	***68.863***	**-**	**-**	***44.244***	**-**	**-**	***36.176***	**-**	**-**	***36.899***	**-**	**-**	**-**	**-**	**-**	***36.899***
9) SA401 INITIAL TRAINING																				
9.1) ACOUSTICS	A		-	-	3.589	-	-	1.848	-	-	1.885	-	-	1.923	-	-	-	-	-	1.923
9.2) TOWED ARRAY	A		-	-	1.347	-	-	1.035	-	-	0.708	-	-	0.722	-	-	-	-	-	0.722
Subtotal: 9) SA401 INITIAL TRAINING			**-**	**-**	***4.936***	**-**	**-**	***2.883***	**-**	**-**	***2.593***	**-**	**-**	***2.645***	**-**	**-**	**-**	**-**	**-**	***2.645***
10) SA900 CONSULTING SERVICES																				
10.1) ACOUSTICS	A		-	-	2.866	-	-	1.476	-	-	1.506	-	-	1.536	-	-	-	-	-	1.536
10.2) TOWED SYSTEMS	A		-	-	1.420	-	-	1.089	-	-	0.746	-	-	0.761	-	-	-	-	-	0.761
Subtotal: 10) SA900 CONSULTING SERVICES			**-**	**-**	***4.286***	**-**	**-**	***2.565***	**-**	**-**	***2.252***	**-**	**-**	***2.297***	**-**	**-**	**-**	**-**	**-**	***2.297***
Total			**-**	**-**	**301.609**	**-**	**-**	**155.685**	**-**	**-**	**139.130**	**-**	**-**	**130.576**	**-**	**-**	**-**	**-**	**-**	**130.576**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

(1) SA102 TOWED SYSTEMS - Refurbishment & Upgrades are variable year-to-year based on projected Towed Array inventory requirements necessary to support submarine deployment schedules. Refurbishment/upgrade of TB-16, TB-34, TB-34A, TB-23, TB-23 iPEN, TB-29A, and TB-29C series arrays consists of procurement and assembly activities for over 375 module upgrades per year, over 600 array on-load and off-load evolutions per year; as well as, more than 150 array/module calibrations per year to increase reliability and address End-of-Life (EOL) upgrade requirements.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment	Aggregated Items Title: Sonar Switches and Transducers

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) PU100 SONAR SWITCHES AND TRANSDUCERS (2)																				
1.1) TR-353	A		6,370.00	100	0.637	6,494.59	100	0.649	6,624.48	100	0.662	6,757.00	100	0.676	-	-	-	6,757.00	100	0.676
1.2) CW-1147 DOME	A		18,900.00	20	0.378	19,483.78	10	0.195	19,873.45	10	0.199	20,271.00	10	0.203	-	-	-	20,271.00	10	0.203
1.3) CW-1181E DOME	A		5,272.73	33	0.174	5,412.16	18	0.097	5,520.40	18	0.099	5,631.00	18	0.101	-	-	-	5,631.00	18	0.101
1.4) DT-574 100FT	A		2,100.00	200	0.420	2,164.86	100	0.216	2,208.16	100	0.221	2,252.32	100	0.225	-	-	-	2,252.32	100	0.225
1.5) MX-12309 SSGN HFSA WINDOW	A		188,000.00	1	0.188	191,977.26	1	0.192	195,816.81	1	0.196	199,733.14	1	0.200	-	-	-	199,733.14	1	0.200
1.6) CABLES	A		-	-	1.260	-	-	0.748	-	-	0.752	-	-	0.767	-	-	-	-	-	0.767
1.7) DT-574 50FT	A		578.33	600	0.347	595.84	300	0.179	607.75	300	0.182	619.91	300	0.186	-	-	-	619.91	300	0.186
1.8) CW-1181C	A		5,250.00	40	0.210	5,412.16	20	0.108	5,520.40	20	0.110	5,630.81	20	0.113	-	-	-	5,630.81	20	0.113
1.9) MX-10624 Window	A		14,050.00	20	0.281	14,504.59	10	0.145	14,794.68	10	0.148	15,090.58	10	0.151	-	-	-	15,090.58	10	0.151
1.10) DT-5740 LSA OBE	A		17,175.00	40	0.687	17,693.60	20	0.354	18,047.47	20	0.361	18,404.42	20	0.368	-	-	-	18,404.42	20	0.368
1.11) DT-511 Hydrophone	A		29,700.00	30	0.891	30,596.75	15	0.459	31,208.69	15	0.468	31,832.86	15	0.477	-	-	-	31,832.86	15	0.477
1.12) DT-592 Hydrophone	A		41,750.00	36	1.503	43,016.94	18	0.774	43,877.28	18	0.790	44,754.82	18	0.806	-	-	-	44,754.82	18	0.806
1.13) TR-233 Transducer	A		10,500.00	40	0.420	10,824.32	20	0.216	11,040.81	20	0.221	11,261.62	20	0.225	-	-	-	11,261.62	20	0.225
1.14) TR-282 Transducer	A		28,714.29	14	0.402	29,619.28	7	0.207	30,211.67	7	0.211	30,815.90	7	0.216	-	-	-	30,815.90	7	0.216
1.15) TR-302 Transducer	A		23,777.78	18	0.428	24,277.41	18	0.437	24,762.95	18	0.446	25,258.21	18	0.455	-	-	-	25,258.21	18	0.455
1.16) TR-302 Window	A		1,050.00	20	0.021	1,082.43	10	0.011	1,104.08	10	0.011	1,126.16	10	0.011	-	-	-	1,126.16	10	0.011
1.17) TR-321 Transducer	A		17,166.67	18	0.309	17,686.80	9	0.159	18,040.54	9	0.162	18,401.35	9	0.166	-	-	-	18,401.35	9	0.166
1.18) TR-321 V CTD	A		19,250.00	40	0.770	19,828.19	20	0.397	20,224.75	20	0.404	20,629.25	20	0.413	-	-	-	20,629.25	20	0.413
1.19) TR-338 Transducer	A		24,233.33	30	0.727	24,969.60	15	0.375	25,468.99	15	0.382	25,978.37	15	0.390	-	-	-	25,978.37	15	0.390
1.20) TR-341 Transducer	A		18,550.00	40	0.742	19,101.74	20	0.382	19,483.78	20	0.390	19,873.45	20	0.397	-	-	-	19,873.45	20	0.397
1.21) WAA OBE	A		12,610.00	100	1.261	12,989.19	50	0.649	13,248.97	50	0.662	13,513.95	50	0.676	-	-	-	13,513.95	50	0.676
1.22) NCC CONNECTORS	A		1,048.08	104	0.109	1,082.43	50	0.054	1,104.08	50	0.055	1,126.16	50	0.056	-	-	-	1,126.16	50	0.056
1.23) DT-699 HFSA RECEIVE	A		74,583.33	12	0.895	76,852.68	6	0.461	78,389.74	6	0.470	79,957.53	6	0.480	-	-	-	79,957.53	6	0.480
1.24) TR-364 HFSP XMIT	A		163,500.00	2	0.327	168,344.15	1	0.168	171,711.03	1	0.172	175,145.25	1	0.175	-	-	-	175,145.25	1	0.175
1.25) TR-317	A		4,244.62	650	2.759	4,329.73	650	2.814	4,416.32	850	3.754	4,504.65	850	3.829	-	-	-	4,504.65	850	3.829
1.26) TR-281	A		23,583.33	12	0.283	24,270.06	6	0.146	24,755.46	6	0.149	25,250.57	6	0.152	-	-	-	25,250.57	6	0.152

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Aggregated Items Title:** Sonar Switches and Transducers

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1.27) DT-513 Hydrophone	A		4,420.38	157	0.694	4,549.84	85	0.387	4,640.84	75	0.348	4,733.65	75	0.355	-	-	-	4,733.65	75	0.355
1.28) DT-100 HFSA RECEIVE	A		78,750.00	4	0.315	81,182.41	3	0.244	82,806.06	3	0.248	84,462.18	3	0.253	-	-	-	84,462.18	3	0.253
Subtotal: 1) PU100 SONAR SWITCHES AND TRANSDUCERS			**-**	**-**	***17.438***	**-**	**-**	***11.223***	**-**	**-**	***12.273***	**-**	**-**	***12.522***	**-**	**-**	**-**	**-**	**-**	***12.522***
2) PU200 ENGINEERING CHANGES																				
2.1) ENGINEERING CHANGES	A		-	-	0.433	-	-	0.223	-	-	0.227	-	-	0.232	-	-	-	-	-	0.232
Subtotal: 2) PU200 ENGINEERING CHANGES			**-**	**-**	***0.433***	**-**	**-**	***0.223***	**-**	**-**	***0.227***	**-**	**-**	***0.232***	**-**	**-**	**-**	**-**	**-**	***0.232***
3) PU300 PROGRAM SUPPORT																				
3.1) PROGRAM SUPPORT	A		-	-	2.167	-	-	1.116	-	-	1.138	-	-	1.161	-	-	-	-	-	1.161
Subtotal: 3) PU300 PROGRAM SUPPORT			**-**	**-**	***2.167***	**-**	**-**	***1.116***	**-**	**-**	***1.138***	**-**	**-**	***1.161***	**-**	**-**	**-**	**-**	**-**	***1.161***
Total			**-**	**-**	**20.038**	**-**	**-**	**12.562**	**-**	**-**	**13.638**	**-**	**-**	**13.915**	**-**	**-**	**-**	**-**	**-**	**13.915**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

(2) PU100 SONAR SWITCHES AND TRANSDUCERS - Due to Fleet usage requirements to maintain submarines in an operational status, adjustments are made to quantities throughout the FYDP. Items not procured in a single year do not impact the production line.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 1 / SA101 SSBN LEGACY INTERFACE HARDWARE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	11.652	27.527	20.902	0.000	20.902	5.046	0.000	0.000	0.000	0.000	65.127
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	11.652	27.527	20.902	0.000	20.902	5.046	0.000	0.000	0.000	0.000	65.127
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**11.652**	**27.527**	**20.902**	**0.000**	**20.902**	**5.046**	**0.000**	**0.000**	**0.000**	**0.000**	**65.127**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding supports procurement of hardware to accommodate increased power requirements of SSBN modernization equipment.

SSBN Legacy Interface Hardware supports emergent Engineering Change Proposals (ECPs) and hardware changes necessary to address significantly expanded power and infrastructure driven by required capability improvements. These funds support the conversion of the SSBN from a legacy Sonar system to the A-RCI model requiring upgrades to the power and infrastructure of the platform.

[SA101 SSBN LEGACY INTERFACE HARDWARE] Funding in FY 2021 provides for the installation of three kits purchased in FY 2020 and the procurement of one additional kit in FY 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 1 / SA101 SSBN LEGACY INTERFACE HARDWARE
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSBN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA101 SSBN LEGACY INTERFACE HARDWARE												
B Kits												
Recurring												
1.1.1) SA101 SSBN LEGACY INTERFACE HARDWARE - NonOrganic	- / -	2 / 11.652	3 / 17.828	1 / 6.062	- / -	1 / 6.062	- / -	- / -	- / -	- / -	- / -	6 / 35.542
Subtotal: Recurring	*- / 0.000*	*- / 11.652*	*- / 17.828*	*- / 6.062*	*- / -*	*- / 6.062*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 35.542*
Subtotal: SA101 SSBN LEGACY INTERFACE HARDWARE	*- / -*	*2 / 11.652*	*3 / 17.828*	*1 / 6.062*	*- / -*	*1 / 6.062*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*6 / 35.542*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 11.652*	*- / 17.828*	*- / 6.062*	*- / -*	*- / 6.062*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 35.542*
Installation												
Modification Item 1 of 1: SA101 SSBN LEGACY INTERFACE HARDWARE	- / 0.000	- / 0.000	- / 9.699	- / 14.840	- / 0.000	- / 14.840	- / 5.046	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 29.585
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 9.699*	*- / 14.840*	*- / -*	*- / 14.840*	*- / 5.046*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 29.585*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**11.652**	**27.527**	**20.902**	**0.000**	**20.902**	**5.046**	**0.000**	**0.000**	**0.000**	**0.000**	**65.127**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 1 / SA101 SSBN LEGACY INTERFACE HARDWARE

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA101 SSBN LEGACY INTERFACE HARDWARE

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: Manassas, VA

Administrative Leadtime *(in Months)*: 6 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	Dec 2019	Dec 2020	Dec 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: SA101 SSBN LEGACY INTERFACE HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	2 / 9.699	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 9.699
FY 2020	- / -	- / -	- / -	3 / 14.840	0 / 0.000	3 / 14.840	- / -	- / -	- / -	- / -	0 / 0.000	3 / 14.840
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.046	- / -	- / -	- / -	0 / 0.000	1 / 5.046
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 9.699	3 / 14.840	0 / 0.000	3 / 14.840	1 / 5.046	- / -	- / -	- / -	0 / 0.000	6 / 29.585

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	1	1	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	-	-	-	-	-	-	1	1	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 2 / SA106 LOW COST CONFORMAL ARRAY KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	26.208	3.680	5.007	14.044	0.000	14.044	14.325	25.239	29.807	30.401	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	26.208	3.680	5.007	14.044	0.000	14.044	14.325	25.239	29.807	30.401	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**26.208**	**3.680**	**5.007**	**14.044**	**0.000**	**14.044**	**14.325**	**25.239**	**29.807**	**30.401**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Procurement of Low Cost Conformal Array (LCCA) to provide enhanced situational awareness and collision avoidance capability.

[SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS] Funding in FY 2021 provides for the installation of one array purchased in FY 2020 and the procurement of two additional arrays in FY 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 2 / SA106 LOW COST CONFORMAL ARRAY KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA106 LOW COST CONFORMAL ARRAY KITS												
B Kits												
Recurring												
1.1.1) SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS - NonOrganic	6 / 19.063	- / -	1 / 5.007	2 / 10.215	- / -	2 / 10.215	2 / 10.419	4 / 21.255	4 / 21.680	4 / 22.112	Continuing	Continuing
Subtotal: Recurring	*- / 19.063*	*- / -*	*- / 5.007*	*- / 10.215*	*- / -*	*- / 10.215*	*- / 10.419*	*- / 21.255*	*- / 21.680*	*- / 22.112*	*Continuing*	*Continuing*
Subtotal: SA106 LOW COST CONFORMAL ARRAY KITS	*6 / 19.063*	*- / -*	*1 / 5.007*	*2 / 10.215*	*- / -*	*2 / 10.215*	*2 / 10.419*	*4 / 21.255*	*4 / 21.680*	*4 / 22.112*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 19.063*	*- / -*	*- / 5.007*	*- / 10.215*	*- / -*	*- / 10.215*	*- / 10.419*	*- / 21.255*	*- / 21.680*	*- / 22.112*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA106 LOW COST CONFORMAL ARRAY KITS	- / 7.145	- / 3.680	- / 0.000	- / 3.829	- / 0.000	- / 3.829	- / 3.906	- / 3.984	- / 8.127	- / 8.289	Continuing	Continuing
Subtotal: Installation	*- / 7.145*	*- / 3.680*	*- / -*	*- / 3.829*	*- / -*	*- / 3.829*	*- / 3.906*	*- / 3.984*	*- / 8.127*	*- / 8.289*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**26.208**	**3.680**	**5.007**	**14.044**	**0.000**	**14.044**	**14.325**	**25.239**	**29.807**	**30.401**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 2 / SA106 LOW COST CONFORMAL ARRAY KITS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA106 LOW COST CONFORMAL ARRAY KITS

Manufacturer Information

Manufacturer Name: LOCKHEED MARTIN | Manufacturer Location: SYRACUSE, NY

Administrative Leadtime *(in Months)*: 6 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025
Delivery Dates		Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025	Apr 2026

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	4 / 7.145	2 / 3.680	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 10.825
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	1 / 3.829	0 / 0.000	1 / 3.829	- / -	- / -	- / -	- / -	0 / 0.000	1 / 3.829
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.906	- / -	- / -	- / -	0 / 0.000	2 / 3.906
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.984	- / -	- / -	0 / 0.000	2 / 3.984
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 8.127	- / -	0 / 0.000	4 / 8.127
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 8.289	0 / 0.000	4 / 8.289
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 8.455	4 / 8.455
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	4 / 7.145	2 / 3.680	- / -	1 / 3.829	0 / 0.000	1 / 3.829	2 / 3.906	2 / 3.984	4 / 8.127	4 / 8.289	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	4	-	-	2	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	4	-	-	-	4	-	Cont.	Cont.
Out	4	-	-	2	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	4	-	-	-	4	-	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 3 / SA106 HIGH FREQUENCY SAIL ARRAY
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.963	6.120	8.405	6.492	0.000	6.492	2.249	0.000	0.000	0.000	0.000	33.229
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.963	6.120	8.405	6.492	0.000	6.492	2.249	0.000	0.000	0.000	0.000	33.229
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.963**	**6.120**	**8.405**	**6.492**	**0.000**	**6.492**	**2.249**	**0.000**	**0.000**	**0.000**	**0.000**	**33.229**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The High Frequency Sail Array (HFSA) provides high frequency active and passive capability supporting Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASUW) for SSNs, and contact avoidance for SSNs and SSBNs.

[SA106 HIGH FREQUENCY SAIL ARRAY] Funding in FY 2021 provides for the installation of two arrays purchased in FY 2020 and the procurement of one additional array in FY 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 3 / SA106 HIGH FREQUENCY SAIL ARRAY
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSN, SSBN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA106 HIGH FREQUENCY SAIL ARRAY												
B Kits												
Recurring												
1.1.1) SA106 HIGH FREQUENCY SAIL ARRAY - NonOrganic	3 / 5.807	2 / 4.001	2 / 4.081	1 / 2.082	- / -	1 / 2.082	- / -	- / -	- / -	- / -	- / -	8 / 15.971
Subtotal: Recurring	*- / 5.807*	*- / 4.001*	*- / 4.081*	*- / 2.082*	*- / -*	*- / 2.082*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 15.971*
Subtotal: SA106 HIGH FREQUENCY SAIL ARRAY	*3 / 5.807*	*2 / 4.001*	*2 / 4.081*	*1 / 2.082*	*- / -*	*1 / 2.082*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*8 / 15.971*
Subtotal: Procurement, All Modification Items	*- / 5.807*	*- / 4.001*	*- / 4.081*	*- / 2.082*	*- / -*	*- / 2.082*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 15.971*
Installation												
Modification Item 1 of 1: SA106 HIGH FREQUENCY SAIL ARRAY	- / 4.156	- / 2.119	- / 4.324	- / 4.410	- / 0.000	- / 4.410	- / 2.249	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 17.258
Subtotal: Installation	*- / 4.156*	*- / 2.119*	*- / 4.324*	*- / 4.410*	*- / -*	*- / 4.410*	*- / 2.249*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 17.258*
Total												
Total Cost (Procurement + Support + Installation)	**9.963**	**6.120**	**8.405**	**6.492**	**0.000**	**6.492**	**2.249**	**0.000**	**0.000**	**0.000**	**0.000**	**33.229**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 3 / SA106 HIGH FREQUENCY SAIL ARRAY

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA106 HIGH FREQUENCY SAIL ARRAY

Manufacturer Information

Manufacturer Name: NUWC Neport | Manufacturer Location: Newport, RI

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 17

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	May 2020	May 2021	May 2022				

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA106 HIGH FREQUENCY SAIL ARRAY

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 4.156	1 / 2.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 6.275
FY 2019	- / -	- / -	2 / 4.324	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.324
FY 2020	- / -	- / -	- / -	2 / 4.410	0 / 0.000	2 / 4.410	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.410
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.249	- / -	- / -	- / -	0 / 0.000	1 / 2.249
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 4.156	1 / 2.119	2 / 4.324	2 / 4.410	0 / 0.000	2 / 4.410	1 / 2.249	- / -	- / -	- / -	0 / 0.000	8 / 17.258

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	1	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	2	-	-	1	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	18.525	18.896	29.400	0.000	29.400	29.989	30.588	31.200	31.824	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	18.525	18.896	29.400	0.000	29.400	29.989	30.588	31.200	31.824	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**18.525**	**18.896**	**29.400**	**0.000**	**29.400**	**29.989**	**30.588**	**31.200**	**31.824**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for OHIO class submarines. SSBN systems will be approximately half the width of their SSN counterparts. This variance reflects the difference in mission, expected environment, and requirements.

[SA106 OHIO CLASS LARGE VERTICAL ARRAY] Funding in FY 2021 provides for the installation of one array purchased in FY 2019 and the procurement of one additional array in FY 2021. In addition to the complex effort required to affix the array, which covers approximately six percent of the submarine's hull, installation costs account for structural alterations required to integrate the array and its subcomponents, alterations to the SSBN superstructure, environmental enclosures, and the installation of new hull penetrators.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSBN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA106 OHIO CLASS LARGE VERTICAL ARRAY												
B Kits												
Recurring												
1.1.1) SA106 OHIO CLASS LARGE VERTICAL ARRAY - NonOrganic	- / -	1 / 18.525	1 / 18.896	1 / 19.273	- / -	1 / 19.273	1 / 19.659	1 / 20.052	1 / 20.453	1 / 20.862	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / 18.525*	*- / 18.896*	*- / 19.273*	*- / -*	*- / 19.273*	*- / 19.659*	*- / 20.052*	*- / 20.453*	*- / 20.862*	*Continuing*	*Continuing*
Subtotal: SA106 OHIO CLASS LARGE VERTICAL ARRAY	*- / -*	*1 / 18.525*	*1 / 18.896*	*1 / 19.273*	*- / -*	*1 / 19.273*	*1 / 19.659*	*1 / 20.052*	*1 / 20.453*	*1 / 20.862*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 18.525*	*- / 18.896*	*- / 19.273*	*- / -*	*- / 19.273*	*- / 19.659*	*- / 20.052*	*- / 20.453*	*- / 20.862*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA106 OHIO CLASS LARGE VERTICAL ARRAY	- / 0.000	- / 0.000	- / 0.000	- / 10.127	- / 0.000	- / 10.127	- / 10.330	- / 10.536	- / 10.747	- / 10.962	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 10.127*	*- / -*	*- / 10.127*	*- / 10.330*	*- / 10.536*	*- / 10.747*	*- / 10.962*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**18.525**	**18.896**	**29.400**	**0.000**	**29.400**	**29.989**	**30.588**	**31.200**	**31.824**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA106 OHIO CLASS LARGE VERTICAL ARRAY

Manufacturer Information

Manufacturer Name: Electric Boat | Manufacturer Location: Groton, CT

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024
Delivery Dates	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA106 OHIO CLASS LARGE VERTICAL ARRAY

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	1 / 10.127	0 / 0.000	1 / 10.127	- / -	- / -	- / -	- / -	0 / 0.000	1 / 10.127
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.330	- / -	- / -	- / -	0 / 0.000	1 / 10.330
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.536	- / -	- / -	0 / 0.000	1 / 10.536
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.747	- / -	0 / 0.000	1 / 10.747
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.962	0 / 0.000	1 / 10.962
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 11.181	1 / 11.181
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 11.181	1 / 11.181
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	1 / 10.127	0 / 0.000	1 / 10.127	1 / 10.330	1 / 10.536	1 / 10.747	1 / 10.962	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	43.405	44.273	0.000	44.273	65.077	66.379	67.706	116.983	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	43.405	44.273	0.000	44.273	65.077	66.379	67.706	116.983	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**43.405**	**44.273**	**0.000**	**44.273**	**65.077**	**66.379**	**67.706**	**116.983**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Procurement of the VIRGINIA Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the VIRGINIA class submarines. SSN systems will be approximately twice the width of their SSBN counterparts. This variance reflects the difference in mission, expected environment, and requirements.

[SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY] Funding in FY 2021 provides for the procurement of one additional array.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY												
B Kits												
Recurring												
1.1.1) SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY - NonOrganic	- / -	- / -	1 / 43.405	1 / 44.273	- / -	1 / 44.273	1 / 45.159	1 / 46.062	1 / 46.983	2 / 95.846	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 43.405*	*- / 44.273*	*- / -*	*- / 44.273*	*- / 45.159*	*- / 46.062*	*- / 46.983*	*- / 95.846*	*Continuing*	*Continuing*
Subtotal: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY	*- / -*	*- / -*	*1 / 43.405*	*1 / 44.273*	*- / -*	*1 / 44.273*	*1 / 45.159*	*1 / 46.062*	*1 / 46.983*	*2 / 95.846*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 43.405*	*- / 44.273*	*- / -*	*- / 44.273*	*- / 45.159*	*- / 46.062*	*- / 46.983*	*- / 95.846*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 19.918	- / 20.317	- / 20.723	- / 21.137	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 19.918*	*- / 20.317*	*- / 20.723*	*- / 21.137*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**43.405**	**44.273**	**0.000**	**44.273**	**65.077**	**66.379**	**67.706**	**116.983**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY

Manufacturer Information

Manufacturer Name: Electric Boat | Manufacturer Location: Groton, CT

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024
Delivery Dates		Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026

Installation Information

Method of Implementation: TBD:: Installation Name: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	1 / 19.918	- / -	- / -	- / -	0 / 0.000	1 / 19.918
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 20.317	- / -	- / -	0 / 0.000	1 / 20.317
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 20.723	- / -	0 / 0.000	1 / 20.723
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 21.137	0 / 0.000	1 / 21.137
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 21.560	1 / 21.560
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 43.983	2 / 43.983
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	1 / 19.918	1 / 20.317	1 / 20.723	1 / 21.137	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	61.110	62.603	55.560	11.974	0.000	11.974	43.149	91.678	40.829	5.184	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	61.110	62.603	55.560	11.974	0.000	11.974	43.149	91.678	40.829	5.184	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**61.110**	**62.603**	**55.560**	**11.974**	**0.000**	**11.974**	**43.149**	**91.678**	**40.829**	**5.184**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components on Los Angeles Class submarines.

[SA303 688i TECHNOLOGY INSERTION KITS (SWFTS)] Funding in FY 2021 provides for the installation of five kits purchased in FY 2020.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)												
B Kits												
Non-Recurring												
1.1.1) SA303 688i TECHNOLOGY INSERTION KITS (SWFTS) - NonOrganic	12 / 47.836	6 / 48.792	5 / 41.473	- / -	- / -	- / -	5 / 43.149	9 / 79.221	2 / 17.957	- / -	Continuing	Continuing
Subtotal: Non-Recurring	*- / 47.836*	*- / 48.792*	*- / 41.473*	*- / -*	*- / -*	*- / -*	*- / 43.149*	*- / 79.221*	*- / 17.957*	*- / -*	*Continuing*	*Continuing*
Subtotal: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)	*12 / 47.836*	*6 / 48.792*	*5 / 41.473*	*- / -*	*- / -*	*- / -*	*5 / 43.149*	*9 / 79.221*	*2 / 17.957*	*- / -*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 47.836*	*- / 48.792*	*- / 41.473*	*- / -*	*- / -*	*- / -*	*- / 43.149*	*- / 79.221*	*- / 17.957*	*- / -*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)	- / 13.274	- / 13.811	- / 14.087	- / 11.974	- / 0.000	- / 11.974	- / 0.000	- / 12.457	- / 22.872	- / 5.184	Continuing	Continuing
Subtotal: Installation	*- / 13.274*	*- / 13.811*	*- / 14.087*	*- / 11.974*	*- / -*	*- / 11.974*	*- / -*	*- / 12.457*	*- / 22.872*	*- / 5.184*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**61.110**	**62.603**	**55.560**	**11.974**	**0.000**	**11.974**	**43.149**	**91.678**	**40.829**	**5.184**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Apr 2019	Apr 2020		Apr 2022	Apr 2023	Apr 2024	
Delivery Dates	Apr 2020	Apr 2021		Apr 2023	Apr 2024	Apr 2025	

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA303 688i TECHNOLOGY INSERTION KITS (SWFTS)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 13.274	6 / 13.811	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 27.085
FY 2019	- / -	- / -	6 / 14.087	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 14.087
FY 2020	- / -	- / -	- / -	5 / 11.974	0 / 0.000	5 / 11.974	- / -	- / -	- / -	- / -	0 / 0.000	5 / 11.974
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 12.457	- / -	- / -	0 / 0.000	5 / 12.457
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 22.872	- / -	0 / 0.000	9 / 22.872
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 5.184	0 / 0.000	2 / 5.184
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	6 / 13.274	6 / 13.811	6 / 14.087	5 / 11.974	0 / 0.000	5 / 11.974	- / -	5 / 12.457	9 / 22.872	2 / 5.184	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	3	3	-	-	3	3	-	-	2	3	-	-	-	-	-	2	3	-	-	3	4	2	-	1	1	-	Cont.	Cont.
Out	6	-	-	3	3	-	-	3	3	-	-	2	3	-	-	-	-	-	2	3	-	-	3	4	2	-	1	1	-	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	16.264	21.283	4.788	0.000	4.788	0.000	0.000	0.000	0.000	0.000	42.335
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	16.264	21.283	4.788	0.000	4.788	0.000	0.000	0.000	0.000	0.000	42.335
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**16.264**	**21.283**	**4.788**	**0.000**	**4.788**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**42.335**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components on SSGN class submarines.

[SSGN TECHNOLOGY INSERTION KITS (SWFTS)] Funding in FY 2021 provides for the installation of two kits purchased in FY 2020.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSGN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)												
B Kits												
Non-Recurring												
1.1.1) SSGN TECHNOLOGY INSERTION KITS (SWFTS) - NonOrganic	- / -	2 / 16.264	2 / 16.589	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 32.853
Subtotal: Non-Recurring	*- / 0.000*	*- / 16.264*	*- / 16.589*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 32.853*
Subtotal: SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)	*- / -*	*2 / 16.264*	*2 / 16.589*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*4 / 32.853*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 16.264*	*- / 16.589*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 32.853*
Installation												
Modification Item 1 of 1: SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)	- / 0.000	- / 0.000	- / 4.694	- / 4.788	- / 0.000	- / 4.788	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.482
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 4.694*	*- / 4.788*	*- / -*	*- / 4.788*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 9.482*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**16.264**	**21.283**	**4.788**	**0.000**	**4.788**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**42.335**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Apr 2019	Apr 2020					
Delivery Dates	Apr 2020	Apr 2021					

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SSGN TECHNOLOGY INSERTION KITS (SWFTS)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	2 / 4.694	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.694
FY 2020	- / -	- / -	- / -	2 / 4.788	0 / 0.000	2 / 4.788	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.788
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 4.694	2 / 4.788	0 / 0.000	2 / 4.788	- / -	- / -	- / -	- / -	0 / 0.000	4 / 9.482

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	24.315	3.415	0.000	0.000	0.000	0.000	9.666	13.555	13.826	3.845	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	24.315	3.415	0.000	0.000	0.000	0.000	9.666	13.555	13.826	3.845	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**24.315**	**3.415**	**0.000**	**0.000**	**0.000**	**0.000**	**9.666**	**13.555**	**13.826**	**3.845**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:
Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components on Seawolf Class submarines.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)												
B Kits												
Recurring												
1.1.1) SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) - NonOrganic	3 / 17.685	- / -	- / -	- / -	- / -	- / -	1 / 9.666	1 / 9.859	1 / 10.056	- / -	Continuing	Continuing
Subtotal: Recurring	*- / 17.685*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 9.666*	*- / 9.859*	*- / 10.056*	*- / -*	*Continuing*	*Continuing*
Subtotal: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)	*3 / 17.685*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 9.666*	*1 / 9.859*	*1 / 10.056*	*- / -*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 17.685*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 9.666*	*- / 9.859*	*- / 10.056*	*- / -*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)	- / 6.630	- / 3.415	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.696	- / 3.770	- / 3.845	Continuing	Continuing
Subtotal: Installation	*- / 6.630*	*- / 3.415*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 3.696*	*- / 3.770*	*- / 3.845*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**24.315**	**3.415**	**0.000**	**0.000**	**0.000**	**0.000**	**9.666**	**13.555**	**13.826**	**3.845**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				Apr 2022	Apr 2023	Apr 2024	
Delivery Dates				Apr 2023	Apr 2024	Apr 2025	

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 6.630	1 / 3.415	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 10.045
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.696	- / -	- / -	0 / 0.000	1 / 3.696
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.770	- / -	0 / 3.770	1 / 7.540
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.845	0 / 0.000	1 / 3.845
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	2 / 6.630	1 / 3.415	- / -	- / -	- / -	- / -	- / -	1 / 3.696	1 / 3.770	1 / 3.845	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	Cont.	Cont.
Out	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	120.547	17.075	9.291	79.363	0.000	79.363	67.655	14.786	70.394	119.238	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	120.547	17.075	9.291	79.363	0.000	79.363	67.655	14.786	70.394	119.238	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**120.547**	**17.075**	**9.291**	**79.363**	**0.000**	**79.363**	**67.655**	**14.786**	**70.394**	**119.238**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides technology insertion upgrade kits to previously A-RCI installed systems on the VA Class, providing the latest and most current capability.

[SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)] Funding in FY 2021 provides for the installation of one kit purchased in FY 2020 and the procurement of eight additional kits in FY 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)												
B Kits												
Recurring												
1.1.1) SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) - NonOrganic	12 / 97.177	- / -	1 / 9.291	8 / 75.810	- / -	8 / 75.810	4 / 38.663	- / -	7 / 70.394	9 / 92.317	Continuing	Continuing
Subtotal: Recurring	*- / 97.177*	*- / -*	*- / 9.291*	*- / 75.810*	*- / -*	*- / 75.810*	*- / 38.663*	*- / -*	*- / 70.394*	*- / 92.317*	*Continuing*	*Continuing*
Subtotal: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)	*12 / 97.177*	*- / -*	*1 / 9.291*	*8 / 75.810*	*- / -*	*8 / 75.810*	*4 / 38.663*	*- / -*	*7 / 70.394*	*9 / 92.317*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 97.177*	*- / -*	*- / 9.291*	*- / 75.810*	*- / -*	*- / 75.810*	*- / 38.663*	*- / -*	*- / 70.394*	*- / 92.317*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)	- / 23.370	- / 17.075	- / 0.000	- / 3.553	- / 0.000	- / 3.553	- / 28.992	- / 14.786	- / 0.000	- / 26.921	Continuing	Continuing
Subtotal: Installation	*- / 23.370*	*- / 17.075*	*- / -*	*- / 3.553*	*- / -*	*- / 3.553*	*- / 28.992*	*- / 14.786*	*- / -*	*- / 26.921*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**120.547**	**17.075**	**9.291**	**79.363**	**0.000**	**79.363**	**67.655**	**14.786**	**70.394**	**119.238**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: VA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Apr 2020	Apr 2021	Apr 2022		Apr 2024	Apr 2025
Delivery Dates		Apr 2021	Apr 2022	Apr 2023		Apr 2025	Apr 2026

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	7 / 23.370	5 / 17.075	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 40.445
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	1 / 3.553	0 / 0.000	1 / 3.553	- / -	- / -	- / -	- / -	0 / 0.000	1 / 3.553
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	8 / 28.992	- / -	- / -	- / -	0 / 0.000	8 / 28.992
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 14.786	- / -	- / -	0 / 0.000	4 / 14.786
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 26.921	0 / 0.000	7 / 26.921
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 35.305	9 / 35.305
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	7 / 23.370	5 / 17.075	- / -	1 / 3.553	0 / 0.000	1 / 3.553	8 / 28.992	4 / 14.786	- / -	7 / 26.921	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	7	-	-	3	2	-	-	-	-	-	-	1	-	-	-	4	4	-	-	2	2	-	-	-	-	-	-	4	3	Cont.	Cont.
Out	7	-	-	3	2	-	-	-	-	-	-	1	-	-	-	4	4	-	-	2	2	-	-	-	-	-	-	4	3	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 10 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	52.675	23.757	25.478	19.010	0.000	19.010	27.803	42.202	30.935	28.130	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	52.675	23.757	25.478	19.010	0.000	19.010	27.803	42.202	30.935	28.130	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**52.675**	**23.757**	**25.478**	**19.010**	**0.000**	**19.010**	**27.803**	**42.202**	**30.935**	**28.130**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides sonar modernization to the SSBN (TRIDENT) Class Submarine Fleet.

[SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)] Funding in FY 2021 provides for the installation of three kits purchased in FY 2020 and the procurement of one additional kit in FY 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 10 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSBN	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)												
B Kits												
Non-Recurring												
1.1.1) SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) - NonOrganic	8 / 31.944	2 / 10.969	3 / 16.782	1 / 5.706	- / -	1 / 5.706	4 / 23.280	4 / 23.746	2 / 12.110	3 / 18.529	Continuing	Continuing
Subtotal: Non-Recurring	*- / 31.944*	*- / 10.969*	*- / 16.782*	*- / 5.706*	*- / -*	*- / 5.706*	*- / 23.280*	*- / 23.746*	*- / 12.110*	*- / 18.529*	*Continuing*	*Continuing*
Subtotal: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)	*8 / 31.944*	*2 / 10.969*	*3 / 16.782*	*1 / 5.706*	*- / -*	*1 / 5.706*	*4 / 23.280*	*4 / 23.746*	*2 / 12.110*	*3 / 18.529*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 31.944*	*- / 10.969*	*- / 16.782*	*- / 5.706*	*- / -*	*- / 5.706*	*- / 23.280*	*- / 23.746*	*- / 12.110*	*- / 18.529*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)	- / 20.731	- / 12.788	- / 8.696	- / 13.304	- / 0.000	- / 13.304	- / 4.523	- / 18.456	- / 18.825	- / 9.601	Continuing	Continuing
Subtotal: Installation	*- / 20.731*	*- / 12.788*	*- / 8.696*	*- / 13.304*	*- / -*	*- / 13.304*	*- / 4.523*	*- / 18.456*	*- / 18.825*	*- / 9.601*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**52.675**	**23.757**	**25.478**	**19.010**	**0.000**	**19.010**	**27.803**	**42.202**	**30.935**	**28.130**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2150 / SSN Acoustic Equipment	**Modification Number / Title:** 10 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)

Manufacturer Information

Manufacturer Name: Lockheed Martin | Manufacturer Location: Manassas, VA

Administrative Leadtime *(in Months)*: 6 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Apr 2019	Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025
Delivery Dates	Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025	Apr 2026

Installation Information

Method of Implementation: SHIPALT:: Installation Name: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	5 / 20.731	3 / 12.788	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 33.519
FY 2019	- / -	- / -	2 / 8.696	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 8.696
FY 2020	- / -	- / -	- / -	3 / 13.304	0 / 0.000	3 / 13.304	- / -	- / -	- / -	- / -	0 / 0.000	3 / 13.304
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.523	- / -	- / -	- / -	0 / 0.000	1 / 4.523
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 18.456	- / -	- / -	0 / 0.000	4 / 18.456
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 18.825	- / -	0 / 0.000	4 / 18.825
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 9.601	0 / 0.000	2 / 9.601
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 14.689	3 / 14.689
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	5 / 20.731	3 / 12.788	2 / 8.696	3 / 13.304	0 / 0.000	3 / 13.304	1 / 4.523	4 / 18.456	4 / 18.825	2 / 9.601	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	-	2	1	-	-	2	-	-	-	2	1	-	-	1	-	-	-	2	2	-	-	2	2	-	-	2	-	Cont.	Cont.
Out	5	-	-	2	1	-	-	2	-	-	-	2	1	-	-	1	-	-	-	2	2	-	-	2	2	-	-	2	-	Cont.	Cont.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2176 / Undersea Warfare Support Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603512N, 0604518N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	101.391	10.134	8.967	9.286	0.000	9.286	16.213	17.283	16.513	15.520	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	101.391	10.134	8.967	9.286	0.000	9.286	16.213	17.283	16.513	15.520	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**101.391**	**10.134**	**8.967**	**9.286**	**0.000**	**9.286**	**16.213**	**17.283**	**16.513**	**15.520**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2021 funding request was reduced by $0.652 million to account for the availability of prior year execution balances.

This Budget Line Item (BLI) consists of three separate and distinct programs, the OPNAV N98 sponsored Aircraft Carrier Tactical Support Center (CV-TSC) program, the OPNAV N96 sponsored Sonar Dome Rubber Windows (SDRW) program, and the OPNAV N2N6 sponsored Undersea Warfare Decision Support System (USW-DSS) program.

FY 2020 TO FY 2021 INCREASE:
- FY 2020 ($8.967M) to FY 2021 ($9.286M) increase ($+0.319M) is driven by FY 2021 being the first year of planned USW-DSS Theater ASW (TASW) Build Out Non-Recurring Engineering (NRE) efforts. These efforts are required to incorporate and field TASW upgrades to existing USW-DSS systems on afloat platforms and at shore node sites (laboratory and training) with an integrated Common Operational Picture (COP), as necessary for USW-DSS to operate in a multi-level security environment.

Program Descriptions:

AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC) (Cost Code VM301):
The AN/SQQ-34 Aircraft Carrier Tactical Support Center (CV-TSC) program fields Anti-Submarine Warfare (ASW) and Surface Warfare (SUW) combat capability to the Aircraft Carrier. The program provides validation and certification for the proposed Engineering Changes fielded to CVNs. The program maintains interoperability with current and future interfaces; supports mission data exchange; improves track/ sensor processing and analysis techniques; improves mission planning; improves data recording, reconstruction, and distribution; improves embedded simulation and training capabilities and implements cyber-security measures to effectively employ overall CVN Self Ship Defense System (SSDS) capabilities. CV-TSC integrates sensor data from Off-Board Aircraft, Organic Platform Sensors, Minotaur Multi-Sensor Fused Track Data, Link-16 Track Data, SSDS Track Data, Global Command and Control System (GCCS) Over-the-Horizon Track Data, and Environmental and Threat Databases to assess the threat and assist the Tactical Action Officer (TAO) and Composite Warfare Commander (CWC) to effectively employ overall CVN self-defense capabilities. CV-TSC generates real-time ASW/SUW information and recommendations, tactical planning and employment of ASW/SUW assets, ASW/SUW sensor data processing and analysis, and distribution of tactically significant data. Aircraft supported include: MH-60R/S Seahawk, P-8 Poseidon, MQ-4C Triton, and future ASW/SUW aircraft.

SONAR DOME RUBBER WINDOWS (SDRWs) (Cost Code VM401):

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2176 / Undersea Warfare Support Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603512N, 0604518N
Line Item MDAP/MAIS Code: N/A		

AN/SQS-53 Sonar Dome Rubber Windows (SDRWs) are installed on all CG47 and DDG51 class ships (Initial Capabilities Document (ICD) for ASW, AN/SQQ-89(V) Operational Requirements Document (ORD) (#667-76-05)dated August 2005). This program provides emergency replacement, wire-reinforced, pressurized rubber acoustic windows and attachment hardware, which experience failure due to corrosion, fatigue, and impact damage. Ships with a severely damaged SDRW need to be dry-docked, so continually monitoring status of SDRWs and maintaining a ready inventory of replacement assets is a priority in order to keep ships on mission. The SDRW significantly improves the surface ship sonar performance by reducing flow-induced self-noise and by providing increased source level receiving and sensitivity resulting from reduced attenuation. This program provides production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments of production systems and field service engineering; and completion of engineering design work and material tests. This program also provides drawings, configuration management information, incorporation of new design and fabrication technology, incorporation of lessons learned and required testing, and constructs sub-elements to confirm single-stage cure of the SDRW production process.

UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS) (Cost Code VM601):
USW-DSS is the Navy Program of Record ASW Command and Control (C2) Net-Centric system supporting the warfighter. USW-DSS provides an integrated, near-real time, net-centric ASW Common Tactical Picture (CTP) and Common Operational Picture (COP) for the Carrier Strike Groups (CSGs). USW-DSS is a C2 capability identified in the ASW Initial Capabilities Document (ICD), for the Sea Combat Commander (SCC) and Theater USW Commander (TUSWC). USW-DSS enables effective planning and execution of Undersea Warfare (USW) operations, optimizes placement of sensors for exploitation of the environment, manages available resources, balances operations versus risk, and provides a clear vulnerability assessment of the operational environment. USW-DSS shortens C2 decision processes for detection-to-engagement across multiple platforms, including those with low-bandwidth communications or intermittent connectivity. Tactical data such as tracks, environmental, and sensor processing data is ingested into USW-DSS through platform specific interfaces such as the AN/SQQ-89(V) Surface Ship ASW Combat System, the Global Command and Control System - Maritime (GCCS-M), and Aircraft Carrier Tactical Support Center (CV-TSC). USW-DSS processes this and other tactical data and supports intelligent dissemination of the data to unit level and theater level platforms in support of an enhanced USW tactical picture. USW-DSS provides USW Commanders with an expanded, net-centric USW collaborative capability across CSG platforms (CVNs, CGs, DDGs) as well as supporting shore nodes to include Commander Task Force (CTF), the Naval Oceanographic Processing Facility (NOPF), and Tactical Operations Center (TOC) and Mobile Tactical Operations Center (M-TOC). On afloat platforms, USW-DSS processing software is virtualized for portability and is hosted on the Integrated Shipboard Network System (ISNS) and Consolidated Afloat Networks and Enterprise Services (CANES) systems and implements a Service-Oriented Architecture (SOA) with display generation and operator interfaces provided via USW-DSS hardware. For support and ashore nodes, USW-DSS processing software is hosted on Commercial Off The Shelf (COTS) hardware. Future USW-DSS capability is phased to deliver timely and cost-effective software improvements to the warfighter via the Build / Fleet Capability Release (FCR) process funded under the USW-DSS RDT&EN Program Element (PE) 0604518N Project 3094 development program, for transition and fielding via the USW-DSS OPN BLI 2176 program. USW-DSS procurements are installed on CSG platforms and supporting shore nodes via permanent Ship Alterations (SHIPALTs). Workstation procurements are required to support ISNS and CANES configured ships as well as shore nodes.

USW-DSS NOTE: In FY 2021, a major Non-Recurring Engineering (NRE) effort will begin to incorporate and field Theater ASW (TASW) upgrades to existing USW-DSS systems on afloat platforms and at shore node sites (laboratory and training) with an integrated Common Operational Picture (COP), as necessary for USW-DSS to operate in a multi-level security environment.

[P40A / VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)]: VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)

[P40A / CV-TSC Technology Insert/Refresh & ECP Implementation]: Item Number 1.1 - Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-34 CV-TSC systems. Funding used to implement ECPs to correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and address Information Assurance (IA) issues.

[P40A / Minotaur Multi-Sensor Fused Track Build Out]: Item Number 1.2 - Non-Recurring Engineering (NRE) effort required to incorporate and field Minotaur Multi-Sensor Fused Track upgrades via Interface Processing Racks to CV-TSC systems at shore sites (4) and Aircraft Carriers (8), and provide Integrated Logistics Support (ILS) products including drawings and Interactive Electronic Technical Manuals (IETMs).

[P40A / VM401 - SONAR DOME RUBBER WINDOWS (SDRWs)]: VM401 - SONAR DOME RUBBER WINDOWS (SDRWs)

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2176 / Undersea Warfare Support Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603512N, 0604518N
Line Item MDAP/MAIS Code: N/A		

[P40A / SDRW Procurement]: Item Number 2.1 - Procure SDRWs, shipping fixtures, and fairing angles for emergency replacement on all CG47 and DDG51 class hulls. This line provides emergency replacement, wire-reinforced, pressurized rubber acoustic windows and attachment hardware, which experience failure due to corrosion, fatigue, and impact damage. Ships with a severely damaged SDRW need to be dry-docked, so continually monitoring status of SDRWs and maintaining a ready inventory of replacement assets is a priority in order to keep ships on mission.

[P40A / SDRW Production Support]: Item Number 2.2 - Funding is provided for production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments, and field service engineering; and complete engineering design work and material tests. This program also provides drawings, configuration management information, new design and fabrication technology, incorporation of lessons learned and required testing, and construct sub-elements to confirm single-stage cure.

[P40A / VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)]: VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)

[P40A / USW-DSS Shore Sites and Tactical Trainers]: Item Number 3.1 - Consists of the last procurement of USW-DSS post-OPEVAL Build 2 shore site and Tactical Training Equipment (TTE) systems, which are full hardware/software suites. USW-DSS Build 3 will be loaded on all future shore site and TTE systems via the USW-DSS Tech Refresh program FY 2020 and following fiscal years.

[P40A / USW-DSS Tech Refresh]: Item Number 3.2 - Funding is for hardware/software technology upgrades to previously fielded USW-DSS afloat and shore sites, including Theater commands, support nodes, and Tactical Training Equipment (TTE). USW-DSS Tech Refresh will install an integrated, near-real time, net-centric ASW Common Tactical Picture (CTP) and Common Operational Picture (COP) on an electronic Master Tactical Plot (eMTP) for the Fleet and at critical shore command sites. Through USW-DSS Tech Refresh targeted architectural improvements developed under USW-DSS RDT&EN Program Element 0604518N Project 3094, Build 3 Fleet Change Request-1 (FCR-1) and follow-on FCRs will facilitate the migration of key components of USW-DSS onto existing installed systems in Fleet use. Tech Refreshes improve software scalability while keeping future hardware costs in check.

[P40A / USW-DSS Engineering Changes (ECs)]: Item Number 3.3 - Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades. Funding will be used to support Reliability, Maintainability, and Availability (RM&A) modifications, correct deficiencies identified through Fleet use, and upgrade of unreliable components.

[P40A / USW-DSS System Technical Support]: Item Number 3.4 - Funding is for USW-DSS program Software Support Activity (SSA) efforts in performing the following functions: generation/assessment of Software Problem Reports (SPRs)/Software Trouble Reports (STRs); responding to Fleet software change requests; Configuration Management (CM); software Quality Assurance (QA); software installation automation; and software recovery support.

[P40A / USW-DSS Production Support]: Item Number 3.5 - Consists of on-site engineering support; Consolidated Afloat Network and Enterprise Services (CANES) Integrated Product Team (IPT) Support; Information Assurance (IA) certification support; production quality assurance; system sustainability support; Integrated Logistics Support (ILS) product updates/support; status reporting and technical briefings; program office support; and all other production support efforts directly related to delivery of USW-DSS to both the Integrated Shipboard Network System (ISNS) and CANES systems, and ultimately to the Fleet.

[P40A / USW-DSS CANES S/W Shipsets]: Item Number 3.6 - Consists of initial loads of the latest USW-DSS software suite on new Consolidated Afloat Network and Enterprise Services (CANES) equipped ships.

[P40A / USW-DSS Theater ASW (TASW) Build Out]: Item Number 3.7 - Non-Recurring Engineering (NRE) effort beginning in FY 2021 required to incorporate and field TASW upgrades to existing USW-DSS systems on afloat platforms and at shore node sites (laboratory and training) with an integrated Common Operational Picture (COP), as necessary for USW-DSS to operate in a multi-level security environment.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars	**P-1 Line Item Number / Title:** 2176 / Undersea Warfare Support Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603512N, 0604518N
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Undersea Warfare Support Equipment	P-5a			- / 101.391	- / 10.134	- / 8.967	- / 9.286	- / -	- / 9.286
P-40	**Total Gross/Weapon System Cost**				**- / 101.391**	**- / 10.134**	**- / 8.967**	**- / 9.286**	**- / 0.000**	**- / 9.286**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY 2020 TO FY 2021 INCREASE:
- FY 2020 ($8.967M) to FY 2021 ($9.286M) increase ($+0.319M) is driven by FY 2021 being the first year of planned USW-DSS Theater ASW (TASW) Build Out Non-Recurring Engineering (NRE) efforts. These efforts are required to incorporate and field TASW upgrades to existing USW-DSS systems on afloat platforms and at shore node sites (laboratory and training) with an integrated Common Operational Picture (COP), as necessary for USW-DSS to operate in a multi-level security environment.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2176 / Undersea Warfare Support Equipment	**Aggregated Items Title:** Undersea Warfare Support Equipment

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)																				
1.1) CV-TSC Technology Insert/ Refresh & ECP Implementation	A		-	-	11.169	-	-	0.334	-	-	0.343	-	-	0.150	-	-	-	-	-	0.150
Subtotal: 1) VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)			**-**	**-**	***11.169***	**-**	**-**	***0.334***	**-**	**-**	***0.343***	**-**	**-**	***0.150***	**-**	**-**	**-**	**-**	**-**	***0.150***
2) VM401 - SONAR DOME RUBBER WINDOWS (SDRWs)																				
2.1) SDRW Procurement(†)	A		2,775K	13	36.075	2,264K	1	2.264	2,309K	1	2.309	2,355K	1	2.355	-	-	-	2,355K	1	2.355
2.2) SDRW Production Support			-	-	11.623	-	-	0.231	-	-	0.298	-	-	0.273	-	-	-	-	-	0.273
Subtotal: 2) VM401 - SONAR DOME RUBBER WINDOWS (SDRWs)			**-**	**-**	***47.698***	**-**	**-**	***2.495***	**-**	**-**	***2.607***	**-**	**-**	***2.628***	**-**	**-**	**-**	**-**	**-**	***2.628***
3) VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)																				
3.1) USW-DSS Shore Sites and Tactical Trainers(†)	A		1,056K	6	6.335	460,000.00	1	0.460	-	-	-	-	-	-	-	-	-	-	-	-
3.2) USW-DSS Tech Refresh(†)	A		311,000.00	12	3.732	315,000.00	5	1.575	126,000.00	15	1.890	129,000.00	15	1.935	-	-	-	129,000.00	15	1.935
3.3) USW-DSS Engineering Changes (ECs)			-	-	6.976	-	-	1.076	-	-	1.098	-	-	1.120	-	-	-	-	-	1.120
3.4) USW-DSS System Technical Support			-	-	9.177	-	-	2.197	-	-	1.362	-	-	1.389	-	-	-	-	-	1.389
3.5) USW-DSS Production Support			-	-	11.422	-	-	0.814	-	-	0.830	-	-	0.847	-	-	-	-	-	0.847
3.6) USW-DSS CANES S/W Shipsets(†)	A		87,178.57	56	4.882	91,000.00	13	1.183	93,000.00	9	0.837	95,000.00	4	0.380	-	-	-	95,000.00	4	0.380
3.7) USW-DSS Theater ASW (TASW) Build Out (1)	A		-	-	-	-	-	-	-	-	-	-	-	0.837	-	-	-	-	-	0.837
Subtotal: 3) VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)			**-**	**-**	***42.524***	**-**	**-**	***7.305***	**-**	**-**	***6.017***	**-**	**-**	***6.508***	**-**	**-**	**-**	**-**	**-**	***6.508***
Total			**-**	**-**	**101.391**	**-**	**-**	**10.134**	**-**	**-**	**8.967**	**-**	**-**	**9.286**	**-**	**-**	**-**	**-**	**-**	**9.286**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	**P-1 Line Item Number / Title:** 2176 / Undersea Warfare Support Equipment	**Aggregated Items Title:** Undersea Warfare Support Equipment

(1) Item Number 3.7 - Non-Recurring Engineering (NRE) effort beginning in FY 2021 required to incorporate and field TASW upgrades to existing USW-DSS systems on afloat platforms and at shore node sites (laboratory and training) with an integrated Common Operational Picture (COP), as necessary for USW-DSS to operate in a multi-level security environment.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment	Aggregated Items: Undersea Warfare Support Equipment

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2) VM401 - SONAR DOME RUBBER WINDOWS (SDRWs)												
2.1) SDRW Procurement		2019	UTC Aerospace Systems (formerly Goodrich) / Jacksonville, FL	SS / FP	NAVSEA	Jun 2019	Jun 2021	1	2,264K	Y		
2.1) SDRW Procurement		2020	UTC Aerospace Systems (formerly Goodrich) / Jacksonville, FL	SS / FP	NAVSEA	Mar 2020	Mar 2022	1	2,309K	Y		
2.1) SDRW Procurement		2021	UTC Aerospace Systems (formerly Goodrich) / Jacksonville, FL	SS / FP	NAVSEA	Mar 2021	Mar 2023	1	2,355K	Y		
3) VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)												
3.1) USW-DSS Shore Sites and Tactical Trainers		2019	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2018	Apr 2019	1	460,000.00	Y		
3.2) USW-DSS Tech Refresh		2019	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2018	Apr 2019	5	315,000.00	Y		
3.2) USW-DSS Tech Refresh		2020	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2019	Apr 2020	15	126,000.00	Y		
3.2) USW-DSS Tech Refresh		2021	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2020	Apr 2021	15	129,000.00	Y		
3.6) USW-DSS CANES S/W Shipsets		2019	NUWC/Keyport / Keyport, WA	WR	NAVSEA	Nov 2018	Feb 2019	13	91,000.00	Y		
3.6) USW-DSS CANES S/W Shipsets		2020	NUWC/Keyport / Keyport, WA	WR	NAVSEA	Nov 2019	Feb 2020	9	93,000.00	Y		
3.6) USW-DSS CANES S/W Shipsets		2021	NUWC/Keyport / Keyport, WA	WR	NAVSEA	Nov 2020	Feb 2021	4	95,000.00	Y		

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	141.940	21.615	22.331	26.066	0.000	26.066	25.236	29.633	35.562	37.582	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	141.940	21.615	22.331	26.066	0.000	26.066	25.236	29.633	35.562	37.582	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**141.940**	**21.615**	**22.331**	**26.066**	**0.000**	**26.066**	**25.236**	**29.633**	**35.562**	**37.582**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.661	0.229	0.441	-	0.441	0.714	0.617	0.470	0.530	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Submarine Acoustic Warfare System (SAWS) program provides submarines with expendable defensive countermeasures and the systems necessary to externally launch against torpedo and acoustic sensor threats. This program provides ongoing production of countermeasure devices needed to sustain fleet inventories, improvements to enhance the readiness and effectiveness of countermeasure devices and associated External Countermeasure Launcher (ECL) systems on all U.S. submarines. Acoustic Device Countermeasures (ADC) are expendable devices produced in two primary versions. The Internal Countermeasure Launcher (ICL) launches the 3" ADC's and ECL Systems launch the and 6" devices.

WM018 - The Acoustic Augmentation Support Program (AASP) provides acoustic augmentation systems in appropriate configurations for all submarine classes (except SEAWOLF) installed as temporary equipment Temporary Alteration (TEMPALT). A combination of new procurement systems (10) and refurbished systems (8) are required to complete Virginia Blocks I-III (18) installations. A revision to extend the SHIPALT to Virginia Blocks IV completed in FY19 and installs will start in FY26. Development of a revision to extend SHIPALT to Virginia Block V will occur in FY21 and installations will start in FY24. Reliability and refurbishment upgrades provide current in-service AASP systems with new components and software updates to maintain reliability. AASP new procurements are required a year prior installation and refurbished systems the same year as installation.

WM019 - The Countermeasure Set, Acoustic (CSA) program procures and supports the inboard electronic system necessary for preparing and launching 6" Acoustic Devices, Countermeasure (ADCs) from all 688i and newer U.S. submarines. This inboard system consists of the Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and associated cabling, in a class-by-class configuration. The CSA program provides obsolescence support for legacy systems and engineering changes to accommodate modified and planned new devices, such as the ADC MK5. Five efforts are supported: (1) The "CSA SWFTS Integration" effort is integrating the CSA system with the Submarine Warfare Federated Tactical System (SWFTS) System of Systems (SoS). Implementation of a phased approach allowed incremental implementation of initial capabilities. Required funding addresses recurring upgrades within the SWFTS Technology Insertion (TI)/Advanced Processor Build (APB) cycles. (2) The "CSA MK4 Technology Insertion" effort replaces the CSA MK2 MOD2 with a SubTDS-capable, SWFTS-integrated CSA MK4 system on VIRGINIA Class Block I and II submarines (10 hulls) are ongoing. (3) The "CSA SEAWOLF SWFTS Integration" effort replaces the CSA MK2 MOD5 system on SEAWOLF Class submarines (3 hulls) with a SubTDS-capable, SWFTS-integrated CSA system. The non-recurring engineering effort will begin in FY21 with fielding beginning in FY23 and the SWFTS TI-22 baseline. (4) The "CSA SWFTS Virtualization" effort supports the development and integration of the CSA system with the AN/BYG-1 Combat Control System on VIRGINIA and COLUMBIA new construction hulls. (5) The fifth effort is the ongoing support for engineering issues across all CSA systems as they arise.

[P40A / WM014 6 INCH]: WM014 6 INCH - The 6" Countermeasures program procures, reworks, and refreshes ADC MK3 (torpedo countermeasure) devices, ADC MK4 (SONAR countermeasure) devices, and associated Launch Tubes in order to maintain submarine fleet countermeasure device inventory levels in accordance with the Naval Munition Requirements Process (NMRP). The 6" Countermeasure program tracks and implements device improvements through configuration control and an Engineering Change Proposal (ECP) process.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P40A / WM015 3 INCH]: WM015 3 INCH - The 3" Countermeasures program procures ADC MK2 MOD 7 countermeasure devices in order to maintain submarine fleet countermeasure device inventory levels in accordance with the NMRP. The 3" Countermeasures program tracks and implements device improvements through configuration control and the ECP process.

[P40A / WM022 GAS GENERATOR MK77]: WM022 Gas Generator MK 77 - The MK77 Gas Generator (GG) program provides the energetic devise and used as the impulse mechanism for launching 6-inc Acoustic Device Countermeasures (ADC MK3 and ADC MK4) on Virginia, Ohio, Los Angeles Improved and Seawolf U.S. submarine classes. MK77 GG Mod 0 rework is the complete disassembly of a GG that has been deployed and then reassembled into C/C A status with replacement of the inert hardware. MK77 GG Mod 1 is the new procurement unit design to replace the obsolete propellant formulation of the MOD 0 while retaining the same fit and function.

[P40A / WM830 PRODUCTION ENGINEERING]: WM830 - Production Engineering - The Production Engineering line provides production engineering services for SAWS Technical Design Agent (TDA) and In-Service Engineering Agent (ISEA) across all SAWS systems, including AASP. Also provides specification preparation and validation, government prepared production acceptance procedures, production planning, integrated logistics support, planning coordination of government furnished information and government furnished equipment, and contract administration including contract deliverable monitoring and prime contractor monitoring of cost/ schedule performance.

[P40A / PRODUCTION ENGINEERING]: Production Engineering adjustment commensurate with anticipated work to support the ordnance assessment required to extend the service life.

[P40A / WM900 CONSULTING SERVICES]: WM900 Consulting Services - The Consulting Services line procures contractor support services for all SAWS programs including program, financial, acquisition, contract administration and engineering management support.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-40a	Submarine Acoustic Warfare System	P-5a, P-21			- / 82.898	- / 10.099	- / 13.638	- / 15.126	- / -	- / 15.126
P-3a	1 / AASP WM018 (SHIPALT)				- / 12.447	- / 4.061	- / 2.504	- / 3.063	- / 0.000	- / 3.063
P-3a	2 / CSA WM019 (SHIPALT, OCMOD, EC)				- / 46.595	- / 7.455	- / 6.189	- / 7.877	- / 0.000	- / 7.877
P-3a	3 / CRAW WM025 (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 141.940**	**- / 21.615**	**- / 22.331**	**- / 26.066**	**- / 0.000**	**- / 26.066**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-40a	Submarine Acoustic Warfare System	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AASP WM018 (SHIPALT)				- / 5.757	- / 6.879	- / 8.665	- / 10.162	- / 36.411	- / 89.949
P-3a	2 / CSA WM019 (SHIPALT, OCMOD, EC)				- / 6.378	- / 8.307	- / 8.858	- / 7.713	Continuing	Continuing
P-3a	3 / CRAW WM025 (TBD)				- / 0.500	- / 2.500	- / 4.500	- / 6.000	- / 4.590	- / 18.090
P-40	**Total Gross/Weapon System Cost**				**- / 25.236**	**- / 29.633**	**- / 35.562**	**- / 37.582**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2021 SAWS increase procures additional ADC MK4 to meet Fleet requirements.

FY 2021 AASP increase is to extend SHIPALT to Virginia Class BLK V.

FY 2021 CSA increase is due to increased funding required to support virtualization/SWFTS and support meeting the SWFTS TI cycle.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Aggregated Items Title:** Submarine Acoustic Warfare System

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) WM014 6 INCH																				
1.1) 6" Countermeasure Launch Tube	A		-	-	9.181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) ADC MK3 (TORPEDO) NEW (1)(†)	A		30,788.91	649	19.982	-	-	-	50,925.93	81	4.125	51,808.70	115	5.958	-	-	-	51,808.70	115	5.958
1.3) ADC MK3 NON RECURRING	A		-	-	-	-	-	4.700	-	-	2.027	-	-	-	-	-	-	-	-	-
1.4) MK 3 ADC SLEP	A		-	-	2.892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) ADC MK4 (SONAR) NEW (2)(†)	A		-	-	-	-	-	-	66,000.00	28	1.848	67,193.55	62	4.166	-	-	-	67,193.55	62	4.166
1.6) MK 4 ADC SLEP (3)(†)	A		-	-	-	-	-	-	10,000.00	50	0.500	-	-	-	-	-	-	-	-	-
Subtotal: 1) WM014 6 INCH			**-**	**-**	***32.055***	**-**	**-**	***4.700***	**-**	**-**	***8.500***	**-**	**-**	***10.124***	**-**	**-**	**-**	**-**	**-**	***10.124***
2) WM015 3 INCH																				
2.1) ADC MK2(†)	A		5,632.37	1,730	9.744	6,365.74	432	2.750	6,088.50	456	2.776	6,212.80	430	2.672	-	-	-	6,212.80	430	2.672
Subtotal: 2) WM015 3 INCH			**-**	**-**	***9.744***	**-**	**-**	***2.750***	**-**	**-**	***2.776***	**-**	**-**	***2.672***	**-**	**-**	**-**	**-**	**-**	***2.672***
3) WM022 GAS GENERATOR MK77																				
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION (4)(†)	A		11,643.50	1,554	18.094	22,816.00	50	1.141	19,700.00	50	0.985	-	-	-	-	-	-	-	-	-
3.2) GAS GENERATOR MK77 MOD 0 REWORK (5)	A		-	-	6.813	-	-	-	-	-	0.518	-	-	0.525	-	-	-	-	-	0.525
3.4) SYSTEMS ENGINEERING (6)	A		-	-	-	-	-	-	-	-	-	-	-	0.459	-	-	-	-	-	0.459
Subtotal: 3) WM022 GAS GENERATOR MK77			**-**	**-**	***24.907***	**-**	**-**	***1.141***	**-**	**-**	***1.503***	**-**	**-**	***0.984***	**-**	**-**	**-**	**-**	**-**	***0.984***
4) WM830 PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING (7)	A		-	-	13.056	-	-	0.955	-	-	0.332	-	-	0.784	-	-	-	-	-	0.784
Subtotal: 4) WM830 PRODUCTION ENGINEERING			**-**	**-**	***13.056***	**-**	**-**	***0.955***	**-**	**-**	***0.332***	**-**	**-**	***0.784***	**-**	**-**	**-**	**-**	**-**	***0.784***
5) WM900 CONSULTING SERVICES																				
5.1) CONSULTING SERVICES	A		-	-	3.136	-	-	0.553	-	-	0.527	-	-	0.562	-	-	-	-	-	0.562
Subtotal: 5) WM900 CONSULTING SERVICES			**-**	**-**	***3.136***	**-**	**-**	***0.553***	**-**	**-**	***0.527***	**-**	**-**	***0.562***	**-**	**-**	**-**	**-**	**-**	***0.562***
Total			**-**	**-**	**82.898**	**-**	**-**	**10.099**	**-**	**-**	**13.638**	**-**	**-**	**15.126**	**-**	**-**	**-**	**-**	**-**	**15.126**

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Aggregated Items Title:** Submarine Acoustic Warfare System

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) $2.2M congressional cut (Excessive NRE Growth) and a $.3M cut in FY19 caused a reduction of MK 3 units (from 128 to 81 in FY20) and MK 4 units (from 30 to 28 in FY20) to continue to pay for the NRE and to buy 50 ADC MK 4 SLEP units to relieve MK 4 inventory shortage issues resulting from the schedule delay caused by the budget cut.

(2) ADC MK4 (Sonar) $2.146M added in FY21 to fund procurement of 32 additional ADC MK4 devices to address ADC MK4 inventory shortage issue. ADC MK4 4 (Sonar) $.500M added in FY20 to build 50 ADC MK4 Shelf Life Extension Program (SLEP(units extended from 12 to 16 years to meet inventory requirements and address NMRP shortages.

(3) $2.2M congressional cut (Excessive NRE Growth) and a $.3M cut in FY19 caused a reduction of MK 3 units (from 128 to 81 in FY20) and MK 4 units (from 30 to 28 in FY20) to continue to pay for the NRE and to buy 50 ADC MK 4 SLEP units to relieve MK 4 inventory shortage issues resulting from the schedule delay caused by the budget cut.

(4) MK77 MOD 1 units will start to be available for rework in FY22. Rework of a combinations of MK77 MOD 0 and MK77 MOD 1 will occur between FY22 and FY24.

(5) Cost of MK77 Gas Generators (GGs) MOD 0 rework reflects the unit cost for reworked units, not wholly new units.

(6) Cost variance due to MK77 MOD 0 pre-audit and audit certification every 2-3 years. Systems engineering cost previously included in the MK77 MOD 0 rework and MK77 MOD 1 new production unit costs. Detailed cost starting in FY21.

(7) Increase in WM830 from FY20 to FY21 is to support contracting efforts for follow-on ADC MK2 contract.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System	Aggregated Items: Submarine Acoustic Warfare System

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) WM014 6 INCH												
1.2) ADC MK3 (TORPEDO) NEW (1)(†)		2020	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	Jun 2020	Jun 2021	81	50,925.93	Y		
1.2) ADC MK3 (TORPEDO) NEW (1)(†)		2021	ULTRA / BRAINTREE, MA	C / CPFF	NUWC/KEYPORT	Jun 2021	Jun 2022	115	51,808.70	Y		
1.5) ADC MK4 (SONAR) NEW (2)(†)		2020	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	Jun 2020	May 2021	28	66,000.00	Y		
1.5) ADC MK4 (SONAR) NEW (2)(†)		2021	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	Jun 2021	May 2022	62	67,193.55	Y		
1.6) MK 4 ADC SLEP (3)(†)		2020	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	Jun 2020	May 2021	50	10,000.00	Y		
2) WM015 3 INCH												
2.1) ADC MK2(†)		2019	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	May 2019	Aug 2019	432	6,365.74	Y		
2.1) ADC MK2(†)		2020	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	May 2020	May 2021	456	6,088.50	Y		
2.1) ADC MK2(†)		2021	ULTRA / BRAINTREE, MA	C / CPFF	NUWC/KEYPORT	May 2021	May 2022	430	6,212.80	Y		
3) WM022 GAS GENERATOR MK77												
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION (4)(†)		2019	NSWC/INDIAN HEAD / NSWC INDIAN HEAD	WR	NSWC INDIAN HEAD	Oct 2018	Apr 2019	50	22,816.00	Y		
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION (4)(†)		2020	NSWC/INDIAN HEAD / NSWC INDIAN HEAD	WR	NSWC INDIAN HEAD	Oct 2019	Apr 2020	50	19,700.00	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3

P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System

Aggregated Items: Submarine Acoustic Warfare System

Items (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) WM014 6 INCH																															
1.2) ADC MK3 (TORPEDO) NEW [1]																															
Prior Years Deliveries: 649																															
	1	2020	NAVY	81	0	81																					A -	-	-	-	81
	1	2021	NAVY	115	0	115																									115
1.5) ADC MK4 (SONAR) NEW [2]																															
	2	2020	NAVY	28	0	28																					A -	-	-	-	28
	2	2021	NAVY	62	0	62																									62
1.6) MK 4 ADC SLEP [3]																															
	3	2020	NAVY	50	0	50																					A -	-	-	-	50
2) WM015 3 INCH																															
2.1) ADC MK2																															
Prior Years Deliveries: 1730																															
	4	2019	NAVY	432	0	432								A -	-	-	41	41	70	70	70	70	70								0
	4	2020	NAVY	456	0	456																				A -	-	-	-	-	456
	4	2021	NAVY	430	0	430																									430
3) WM022 GAS GENERATOR MK77																															
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION [4]																															
Prior Years Deliveries: 1554																															
	5	2019	NAVY	50	0	50	A -	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	5	5							0
	5	2020	NAVY	50	0	50													A -	-	-	-	-	-	4	4	4	4	4	4	26
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Aggregated Items:** Submarine Acoustic Warfare System

Items (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) WM014 6 INCH																															
1.2) ADC MK3 (TORPEDO) NEW (1)																															
Prior Years Deliveries: 649																															
	1	2020	NAVY	81	0	81	-	-	-	-	-	-	-	-	11	11	11	11	11	11	11	4									0
	1	2021	NAVY	115	0	115									A -	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	75
1.5) ADC MK4 (SONAR) NEW (2)																															
	2	2020	NAVY	28	0	28	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	2	2								0
	2	2021	NAVY	62	0	62									A -	-	-	-	-	-	-	-	-	-	-	6	6	5	5	5	35
1.6) MK 4 ADC SLEP (3)																															
	3	2020	NAVY	50	0	50	-	-	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5								0
2) WM015 3 INCH																															
2.1) ADC MK2																															
Prior Years Deliveries: 1730																															
	4	2019	NAVY	432	432	0																									0
	4	2020	NAVY	456	0	456	-	-	-	-	-	-	-	38	38	40	38	38	38	38	38	38	38	37	37						0
	4	2021	NAVY	430	0	430								A -	-	-	-	-	-	-	-	-	-	-	-	36	36	36	36	36	250
3) WM022 GAS GENERATOR MK77																															
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION (4)																															
Prior Years Deliveries: 1554																															
	5	2019	NAVY	50	50	0																									0
	5	2020	NAVY	50	24	26	4	4	4	4	5	5																			0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Aggregated Items:** Submarine Acoustic Warfare System

Items (Units in Each)							Fiscal Year 2023												Fiscal Year 2024												BALANCE
							Calendar Year 2023												Calendar Year 2024												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) WM014 6 INCH																															
1.2) ADC MK3 (TORPEDO) NEW [1]																															
Prior Years Deliveries: 649																															
	1	2020	NAVY	81	81	0																									0
	1	2021	NAVY	115	40	75	10	10	9	9	9	9	9	10																	0
1.5) ADC MK4 (SONAR) NEW [2]																															
	2	2020	NAVY	28	28	0																									0
	2	2021	NAVY	62	27	35	5	5	5	5	5	5	5																		0
1.6) MK 4 ADC SLEP [3]																															
	3	2020	NAVY	50	50	0																									0
2) WM015 3 INCH																															
2.1) ADC MK2																															
Prior Years Deliveries: 1730																															
	4	2019	NAVY	432	432	0																									0
	4	2020	NAVY	456	456	0																									0
	4	2021	NAVY	430	180	250	36	36	36	36	36	35	35																		0
3) WM022 GAS GENERATOR MK77																															
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION [4]																															
Prior Years Deliveries: 1554																															
	5	2019	NAVY	50	50	0																									0
	5	2020	NAVY	50	50	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Aggregated Items:** Submarine Acoustic Warfare System

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	ULTRA - BRAINTREE, MA	192	288	576	0	0	0	0	7	2	12	14
2	ULTRA - BRAINTREE, MA	192	288	576	8	2	11	13	8	2	11	13
3	ULTRA - BRAINTREE, MA			TBD	0	0	0	0	0	0	0	0
4	ULTRA - BRAINTREE, MA	840	1,440	2,880	0	1	0	1	0	1	12	13
5	NSWC/INDIAN HEAD - NSWC INDIAN HEAD	48	480	960	0	0	0	0	6	5	6	11

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 1 / AASP WM018
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	12.447	4.061	2.504	3.063	0.000	3.063	5.757	6.879	8.665	10.162	36.411	89.949
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	12.447	4.061	2.504	3.063	0.000	3.063	5.757	6.879	8.665	10.162	36.411	89.949
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**12.447**	**4.061**	**2.504**	**3.063**	**0.000**	**3.063**	**5.757**	**6.879**	**8.665**	**10.162**	**36.411**	**89.949**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Acoustic Augmentation Support Program (AASP) provides acoustic augmenting systems in appropriate configurations for all submarine classes (except SEAWOLF) installed as temporary equipment (a TEMPALT). A permanent SHIPALT for VIRGINIA Class Block IV was completed in FY19 and installations will start in FY26, gradually phasing out the TEMPALTs on VIRGINIA Class. Development of a revision to extend SHIPALT to Virginia Block V will occur in FY21 and installations will start in FY24. Reliability and refurbishment upgrades provide current in-service AASP systems with new components and software updates to maintain reliability. AASP new procurements are required a year prior installation and refurbished systems the same year as installation.

[WM018 AASP Support] Includes production support for BLK I-IV SHIPALTS and the AASP reliability and refurbishment upgrade.

[WM018 AASP (Acoustic Augmentation Support Program)] AASP includes costs of procuring new systems including HLF-1, for SHIPALD 4678KP.

[WM018 AASP Reliability and Refurbishment Upgrade] Reliability and refurbishment upgrade to sustain in-service AASP systems.

[WM018 AASP (Acoustic Augmentation Support Program)] Non-recurring costs to produce AASP SHIPALT alteration packages.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 1 / AASP WM018
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/BQT-1	**Modification Type:** SHIPALT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AASP WM018												
B Kits												
Recurring												
1.1.1) WM018 AASP Support - Organic [8]	- / 0.614	- / 0.445	- / 0.454	- / 0.463	- / -	- / 0.463	- / 0.472	- / 0.482	- / 0.613	- / 0.504	- / 2.673	- / 6.720
1.1.2) WM018 AASP (Acoustic Augmentation Support Program) - NonOrganic [9]	4 / 3.564	1 / 1.524	1 / 0.932	1 / 0.951	- / -	1 / 0.951	3 / 2.907	3 / 2.966	3 / 3.024	3 / 3.087	11 / 11.844	30 / 30.799
1.1.3) WM018 AASP Reliability and Refurbishment Upgrade - NonOrganic [10]	2 / 0.202	- / -	- / -	- / -	- / -	- / -	1 / 0.114	- / -	1 / 0.121	2 / 0.248	2 / 0.262	8 / 0.947
Subtotal: Recurring	*- / 4.380*	*- / 1.969*	*- / 1.386*	*- / 1.414*	*- / -*	*- / 1.414*	*- / 3.493*	*- / 3.448*	*- / 3.758*	*- / 3.839*	*- / 14.779*	*- / 38.466*
Non-Recurring												
1.2.1) WM018 AASP (Acoustic Augmentation Support Program) - Organic	- / 4.310	- / -	- / -	- / 0.510	- / -	- / 0.510	- / -	- / -	- / -	- / -	- / -	- / 4.820
Subtotal: Non-Recurring	*- / 4.310*	*- / -*	*- / -*	*- / 0.510*	*- / -*	*- / 0.510*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 4.820*
Subtotal: AASP WM018	*6 / 8.690*	*1 / 1.969*	*1 / 1.386*	*1 / 1.924*	*- / -*	*1 / 1.924*	*4 / 3.493*	*3 / 3.448*	*4 / 3.758*	*5 / 3.839*	*13 / 14.779*	*38 / 43.286*
Subtotal: Procurement, All Modification Items	*- / 8.690*	*- / 1.969*	*- / 1.386*	*- / 1.924*	*- / -*	*- / 1.924*	*- / 3.493*	*- / 3.448*	*- / 3.758*	*- / 3.839*	*- / 14.779*	*- / 43.286*
Installation												
Modification Item 1 of 1: AASP WM018	- / 3.757	- / 2.092	- / 1.118	- / 1.139	- / 0.000	- / 1.139	- / 2.264	- / 3.431	- / 4.907	- / 6.323	- / 21.632	- / 46.663
Subtotal: Installation	*- / 3.757*	*- / 2.092*	*- / 1.118*	*- / 1.139*	*- / -*	*- / 1.139*	*- / 2.264*	*- / 3.431*	*- / 4.907*	*- / 6.323*	*- / 21.632*	*- / 46.663*
Total												
Total Cost (Procurement + Support + Installation)	**12.447**	**4.061**	**2.504**	**3.063**	**0.000**	**3.063**	**5.757**	**6.879**	**8.665**	**10.162**	**36.411**	**89.949**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 1 / AASP WM018
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AASP WM018

Manufacturer Information

Manufacturer Name: HydroAcoustics, Inc	Manufacturer Location: Henrietta, NY
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 10

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025

Manufacturer Name: NUWC Newport	Manufacturer Location: Newport, RI
Administrative Leadtime *(in Months)*: 1	Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				Oct 2021		Oct 2023	Oct 2024
Delivery Dates				Jan 2022		Jan 2024	Jan 2025

Installation Information

Method of Implementation: AIT:: Installation Name: WM018 AASP (Acoustic Augmentation Support Program)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 1.416	2 / 2.092	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 3.508
FY 2019	- / -	- / -	1 / 1.118	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.118
FY 2020	- / -	- / -	- / -	1 / 1.139	0 / 0.000	1 / 1.139	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.139
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.132	- / -	- / -	- / -	0 / 0.000	1 / 1.132
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.431	- / -	- / -	0 / 0.000	3 / 3.431
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.674	- / -	0 / 0.000	3 / 3.674
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.798	0 / 0.000	3 / 3.798
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.874	3 / 3.874
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 15.064	11 / 15.064
Total	2 / 1.416	2 / 2.092	1 / 1.118	1 / 1.139	0 / 0.000	1 / 1.139	1 / 1.132	3 / 3.431	3 / 3.674	3 / 3.798	14 / 18.938	30 / 36.738

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	2	-	2	-	-	-	1	-	-	1	-	-	-	-	1	-	-	3	-	-	-	2	1	-	-	3	-	-	-	14	30
Out	2	-	-	-	2	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	3	-	-	-	3	-	-	-	3	14	30

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 1 / AASP WM018
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AASP WM018

Installation Information

Method of Implementation: AIT:: Installation Name: WM018 AASP Reliability and Refurbishment Upgrade

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 2.341	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.341
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.132	- / -	- / -	- / -	0 / 0.000	1 / 1.132
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.233	- / -	0 / 0.000	1 / 1.233
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.525	0 / 0.000	2 / 2.525
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.694	2 / 2.694
Total	2 / 2.341	- / -	- / -	- / -	- / -	- / -	1 / 1.132	- / -	1 / 1.233	2 / 2.525	2 / 2.694	8 / 9.925

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	1	1	-	2	8
Out	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	2	2	8

Footnotes:

(8) Includes production support for SHIPALT 4678KP, included Technical Direction Agent, Software Support Agent and Information Assurance efforts for Virginia Blocks I-V.

(9) NRE to extend SHIPALT to VIRGINIA Class Block V.

(10) Installation quantities updated in order to accommodate the current budget with the new increased installation cost.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	46.595	7.455	6.189	7.877	0.000	7.877	6.378	8.307	8.858	7.713	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	46.595	7.455	6.189	7.877	0.000	7.877	6.378	8.307	8.858	7.713	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**46.595**	**7.455**	**6.189**	**7.877**	**0.000**	**7.877**	**6.378**	**8.307**	**8.858**	**7.713**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

WM019 - The Countermeasure Set, Acoustic (CSA) program procures and supports the inboard electronic system necessary for preparing and launching 6" Acoustic Devices, Countermeasure (ADCs) from all 688i and newer U.S. submarines. This inboard system consists of the Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and associated cabling, in a class-by-class configuration. The CSA program provides obsolescence support for legacy systems and engineering changes to accommodate modified and planned new devices, such as the ADC MK5. Five efforts are supported: (1) The "CSA SWFTS Integration" effort is integrating the CSA system with the Submarine Warfare Federated Tactical System (SWFTS) System of Systems (SoS) to facilitate the introduction of the ADC MK5 and the Submarine Torpedo Defense (SubTDS) Tactical Decision Aid (TacDA). Implementation of a phased approach was allowed an incremental implementation of initial capabilities. Required funding addresses recurring upgrades within the SWFTS Technology Insertion (TI)/Advanced Processor Build (APB) cycles. (2) The "CSA MK4 Technology Insertion" effort replaces the CSA MK2 MOD2 with a SubTDS-capable, SWFTS-integrated CSA MK4 system on VIRGINIA Class Block I and II submarines (10 hulls) are ongoing. (3) The "CSA SEAWOLF SWFTS Integration" effort replaces the CSA MK2 MOD5 system on SEAWOLF Class submarines (3 hulls) with a SubTDS-capable, SWFTS-integrated CSA system. The non-recurring engineering effort will begin in FY21 with fielding beginning in FY23 and the SWFTS TI-22 baseline. (4) The "CSA SWFTS Virtualization" effort supports the development and integration of the CSA system with the AN/BYG-1 Combat Control System on VIRGINIA and COLUMBIA new construction hulls. (5) The fifth effort is the ongoing support of engineering issues across all CSA systems as they arise.

NOTE: Beginning in FY20, the WM019 budget was restructured to align the CSA development and procurement efforts with the SWFTS TI/APB model. The changes reallocated funding entirely within the WM019 subhead to support current and future SWFTS development efforts. This restructuring will provides clarity to the recurring development and procurement costs associated with CSA systems and upgrades within the SWFTS TI/APB model.

[WM019 CSA MK3 Engineering Changes (LAN, SWFTS, TDA)] WM019 CSA Engineering Changes - Organic Technology insertion effort that supports and designs engineering changes for VA Blk III and following ships, including the Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), and Launch Control Panels (LCPs). This effort supports changes to correct obsolescence issues, supports SWFTS modernization goals and engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.

[WM019 ECPs CSA MK2 MOD 2 Conversion to MK 4] WM019 - ECPs CSA MK2 MOD2 Conversion to CSA MK4 - Organic Technology insertion effort that converts CSA MK2 MOD2 to CSA MK4 to accommodate introduction of ADC MK5 to Virginia Class Block 1 and 2 Ships (10 hulls) is ongoing.

[WM019 CSA MK2 MOD 0 OBSOLESCENCE] WM019 - CSA MK2 MOD0 Obsolescence - NonOrganic Technology refresh effort that designs, builds, tests and certifies replacement components for obsolete CSA MK2 MOD4 on 688i ships and CSA MK2 MOD0 and 3 on SSBNs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

[WM019 CSAMK2 MOD2 CONVERSION to CSA MK4] WM019 - CSA MK2 MOD2 Conversion to CSA MK4 - NonOrganic Technology Insertion effort that procures engineering change kits and systems including Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and CSA support system assets to correct obsolescence, including engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.

[WM019 CSAMK3 Kits and Systems] WM019 - CSA MK3 Kits and Systems - NonOrganic Procures engineering change kits and systems in support of SAWS including Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), CSA support system assets to correct obsolescence issues, including engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.

[WM019 CSA Engineering Changes - Organic] WM019 CSA Engineering Changes - Organic Technology insertion effort that supports and designs engineering changes for the Countermeasure Set, Acoustic (CSA) systems fielded on all 688i and newer U.S. submarines. This supports changes to correct obsolescence issues, and engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.

[WM019 CSA Technology Insertion (TI-20) Upgrade Kits NonOrganic] WM019 CSA Technology Insertion (TI-20) - NonOrganic Procures CSA Technology Insertion to upgrade fielded SWFTS-integrated CSA systems from TI-14 and TI-16 to TI-20 on VIRGINIA Class submarines.

[WM019 CSA Technology Insertion (TI-22) Upgrade Kits NonOrganic] WM019 CSA Technology Insertion (TI-22) - NonOrganic Procures CSA Technology Insertion to upgrade legacy CSA MK2 MOD 5 systems to TI-22 on SEAWOLF Class submarines.

[WM019 CSA Technology Insertion (TI-24) Upgrade Kits NonOrganic] WM019 CSA Technology Insertion (TI-24) - NonOrganic Procures CSA Technology Insertion to upgrade fielded SWFTS-integrated CSA systems from TI-16 and TI-20 to TI-24 on VIRGINIA Class submarines.

[WM019 CSA SWFTS VIRTUALIZATION - Organic] WM019 - CSA SWFTS VIRTUALIZATION Organic Nonrecurring costs for the upgrade, verification, validation and migration of CSA functionality into the AN/BYG-1 Combat Control System and the Payload Control System (PCS) on SWFTS. CSA Virtualization effort supports advanced integration of the CSA system with the AN/BYG-1 Combat Control System on VIRGINIA and COLUMBIA new construction hulls.

[WM019 CSA SEA WOLF SWFTS Integration - Organic] WM019 - CSA SEAWOLF SWFTS Integration Organic Nonrecurring costs for the upgrade, validation, verification, and SHIPALT for the SWFTS-integrated CSA on SEAWOLF in TI-22. CSA upgrade effort for SEAWOLF will deliver a SubTDS-capable CSA system to be fielded in TI-22 SWFTS baseline.

[WM019 CSA MK2 MOD 2 Conversion to CSA MK4] WM019 - CSA MK2 MOD2 Conversion to CSA MK4 - Organic Nonrecurring costs for the Technology Insertion CSA MK4.

[WM019 CSA ISEA] WM019 - CSA ISEA Supports engineering issues across all systems and platforms as they arise, using ISEA support.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Countermeasure Set Acoustic	**Modification Type:** SHIPALT, OCMOD, EC	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CSA WM019												
B Kits												
Recurring												
1.1.1) WM019 CSA MK3 Engineering Changes (LAN, SWFTS, TDA) - Organic	- / 11.869	- / 1.479	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
1.1.2) WM019 ECPs CSA MK2 MOD 2 Conversion to MK 4 - Organic	- / 7.094	- / 1.226	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
1.1.3) WM019 CSA MK2 MOD 0 OBSOLESCENCE - NonOrganic	42 / 5.419	- / 0.379	- / 0.206	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 6.004
1.1.4) WM019 CSAMK2 MOD2 CONVERSION to CSA MK4 - NonOrganic	7 / 3.366	2 / 0.860	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 4.226
1.1.5) WM019 CSAMK3 Kits and Systems - NonOrganic (11)	7 / 1.190	2 / 0.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.865
1.1.6) WM019 CSA Engineering Changes - Organic - Organic (12)	- / -	- / -	- / 2.000	- / 2.098	- / -	- / 2.098	- / 2.279	- / 2.628	- / 2.504	- / 2.540	Continuing	Continuing
1.1.7) WM019 CSA Technology Insertion (TI-20) Upgrade Kits NonOrganic - NonOrganic	- / -	2 / 0.860	3 / 1.050	4 / 1.400	- / -	4 / 1.400	3 / 1.050	- / -	- / -	- / -	- / -	12 / 4.360
1.1.8) WM019 CSA Technology Insertion (TI-22) Upgrade Kits NonOrganic - NonOrganic	- / -	- / -	- / -	2 / 1.000	- / -	2 / 1.000	- / -	1 / 0.500	1 / 0.500	- / -	- / -	4 / 2.000
1.1.9) WM019 CSA Technology Insertion (TI-24) Upgrade Kits NonOrganic - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.100	8 / 2.880	6 / 2.280	4 / 1.520	24 / 8.780
Subtotal: Recurring	*- / 28.938*	*- / 5.479*	*- / 3.256*	*- / 4.498*	*- / -*	*- / 4.498*	*- / 3.329*	*- / 5.228*	*- / 5.884*	*- / 4.820*	*Continuing*	*Continuing*
Non-Recurring												
1.2.1) WM019 CSA SWFTS VIRTUALIZATION - Organic - Organic	- / -	- / -	- / 0.750	- / 0.500	- / -	- / 0.500	- / 0.500	- / 0.500	- / 0.500	- / 0.510	- / -	- / 3.260
1.2.2) WM019 CSA SEA WOLF SWFTS Integration - Organic - Organic (13)	- / -	- / -	- / -	- / 1.125	- / -	- / 1.125	- / 1.147	- / 0.489	- / 0.500	- / 0.375	- / -	- / 3.636
1.2.3) WM019 CSA MK2 MOD 2 Conversion to CSA MK4 - Organic	- / 8.998	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8.998
Subtotal: Non-Recurring	*- / 8.998*	*- / -*	*- / 0.750*	*- / 1.625*	*- / -*	*- / 1.625*	*- / 1.647*	*- / 0.989*	*- / 1.000*	*- / 0.885*	*- / 0.000*	*- / 15.894*
Subtotal: CSA WM019	*56 / 37.936*	*6 / 5.479*	*3 / 4.006*	*6 / 6.123*	*- / -*	*6 / 6.123*	*3 / 4.976*	*7 / 6.217*	*9 / 6.884*	*6 / 5.705*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 37.936*	*- / 5.479*	*- / 4.006*	*- / 6.123*	*- / -*	*- / 6.123*	*- / 4.976*	*- / 6.217*	*- / 6.884*	*- / 5.705*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) WM019 CSA ISEA (14)	- / 6.671	- / 0.750	- / 0.791	- / 0.862	- / -	- / 0.862	- / 0.898	- / 0.980	- / 1.018	- / 1.038	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Countermeasure Set Acoustic	**Modification Type:** SHIPALT, OCMOD, EC	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Subtotal: Support	- / 6.671	- / 0.750	- / 0.791	- / 0.862	- / -	- / 0.862	- / 0.898	- / 0.980	- / 1.018	- / 1.038	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: CSA WM019	- / 1.988	- / 1.226	- / 1.392	- / 0.892	- / 0.000	- / 0.892	- / 0.504	- / 1.110	- / 0.956	- / 0.970	- / 4.000	- / 13.038
Subtotal: Installation	- / 1.988	- / 1.226	- / 1.392	- / 0.892	- / -	- / 0.892	- / 0.504	- / 1.110	- / 0.956	- / 0.970	- / 4.000	- / 13.038
Total												
Total Cost (Procurement + Support + Installation)	**46.595**	**7.455**	**6.189**	**7.877**	**0.000**	**7.877**	**6.378**	**8.307**	**8.858**	**7.713**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CSA WM019

Manufacturer Information

Manufacturer Name: CSA MK2 Obsolescence NUWC Keyport				Manufacturer Location: Keyport, WA			
Administrative Leadtime *(in Months)*: 4				Production Leadtime *(in Months)*: 16			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Feb 2019	Feb 2020					
Delivery Dates	Jun 2020	Jun 2021					
Manufacturer Name: CSA MK 2 to MK4 RAYTHEON				Manufacturer Location: Keyport, WA			
Administrative Leadtime *(in Months)*: 6				Production Leadtime *(in Months)*: 18			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Apr 2019						
Delivery Dates	Oct 2020						
Manufacturer Name: CSA MK3 Technology Insertion (TI-20) TBD				Manufacturer Location: TBD			
Administrative Leadtime *(in Months)*: 0				Production Leadtime *(in Months)*: 18			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Apr 2019	Apr 2020	Apr 2021	Apr 2022			
Delivery Dates	Oct 2020	Oct 2021	Oct 2022	Oct 2023			
Manufacturer Name: CSA MK3 Technology Insertion (TI-22) TBD				Manufacturer Location: TBD			
Administrative Leadtime *(in Months)*: 0				Production Leadtime *(in Months)*: 18			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates			Apr 2021		Apr 2023	Apr 2024	
Delivery Dates			Oct 2022		Oct 2024	Oct 2025	
Manufacturer Name: CSA MK3 Technology Insertion (TI-24) TBD				Manufacturer Location: TBD			
Administrative Leadtime *(in Months)*: 0				Production Leadtime *(in Months)*: 18			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates					Apr 2023	Apr 2024	Apr 2025
Delivery Dates					Oct 2024	Oct 2025	Oct 2026

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CSA WM019

Installation Information

Method of Implementation: AIT:: Installation Name: WM019 CSA MK2 MOD 0 OBSOLESCENCE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	34 / 1.788	5 / 0.286	3 / 0.175	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	42 / 2.249
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	34 / 1.788	5 / 0.286	3 / 0.175	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	42 / 2.249

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	34	-	-	5	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
Out	34	-	-	5	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42

Method of Implementation: AIT:: Installation Name: WM019 CSAMK2 MOD2 CONVERSION to CSA MK4

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	3 / 0.810	4 / 1.102	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 1.912
FY 2019	- / -	- / -	- / -	2 / 0.556	0 / 0.000	2 / 0.556	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.556
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CSA WM019

Installation Information

Method of Implementation: AIT:: Installation Name: WM019 CSAMK2 MOD2 CONVERSION to CSA MK4

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total	- / -	3 / 0.810	4 / 1.102	2 / 0.556	0 / 0.000	2 / 0.556	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.468

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	1	1	1	-	2	2	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Out	-	-	1	1	1	-	2	2	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9

Method of Implementation: AIT:: Installation Name: WM019 CSAMK3 Kits and Systems

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 0.200	1 / 0.130	1 / 0.115	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.345	7 / 0.790
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.230	2 / 0.230
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 0.200	1 / 0.130	1 / 0.115	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.575	9 / 1.020

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	9
Out	2	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	9

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CSA WM019

Installation Information

Method of Implementation: AIT:: Installation Name: WM019 CSA Technology Insertion (TI-20) Upgrade Kits NonOrganic

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	2 / 0.336	0 / 0.000	2 / 0.336	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.336
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.504	- / -	- / -	- / -	0 / 0.000	3 / 0.504
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.672	- / -	- / -	0 / 0.000	4 / 0.672
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.168	2 / 0.336	- / -	0 / 0.000	3 / 0.504
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	2 / 0.336	0 / 0.000	2 / 0.336	3 / 0.504	5 / 0.840	2 / 0.336	- / -	0 / 0.000	12 / 2.016

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	2	-	-	-	3	-	-	-	1	1	3	-	-	-	2	-	-	-	-	-	-	12
Out	-	-	-	-	-	-	-	-	-	-	2	-	-	-	3	-	-	-	1	1	3	-	-	-	2	-	-	-	-	-	12

Method of Implementation: AIT:: Installation Name: WM019 CSA Technology Insertion (TI-22) Upgrade Kits NonOrganic

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.270	1 / 0.270	- / -	0 / 0.000	2 / 0.540
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.270	0 / 0.000	1 / 0.270
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.275	1 / 0.275
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CSA WM019

Installation Information

Method of Implementation: AIT:: Installation Name: WM019 CSA Technology Insertion (TI-22) Upgrade Kits NonOrganic

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.270	1 / 0.270	1 / 0.270	1 / 0.275	4 / 1.085

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	1	4
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	1	4

Method of Implementation: AIT:: Installation Name: WM019 CSA Technology Insertion (TI-24) Upgrade Kits NonOrganic

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.350	4 / 0.700	0 / 0.000	6 / 1.050
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 1.400	8 / 1.400
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.050	6 / 1.050
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.700	4 / 0.700
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.350	4 / 0.700	18 / 3.150	24 / 4.200

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	3	-	18	24
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	3	18	24

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(11) Due to changes in the SWFTS baseline to be installed on VIRGINIA Block II hulls, only four (4) of the CSA MK3 upgrade kits procured will be installed. The remaining kits are being used or will be transferred to labs for testing and continued supportability of the CSA MK3 system.

(12) The program realigned the funding from multiple lines (1.1.1 CSA MK3 Engineering Changes and 1.1.2 ECPs CSA MK2 Mod 2 Conversation to MK 4) into one line in the FY 2019 President's Budget request, 1.1.6 (CSA Engineering Changes). CSA Engineering Changes (1.1.6) reflects organic CSA engineering support efforts less the SEAWOLF effort. The SEAWOLF and non-recurring engineering effort moved to a separate line (1.2.2) for better accountability of this effort.

(13) CSA SEAWOLF SWFTS Integration (1.2.1) reflects organic CSA non-recurring engineering efforts less CSA Engineering Changes (1.1.6) and WM019 CSA SWFTS VIRTUALIZATION (1.2.1). This effort was reallocated from a combination of other organic CSA budget lines (1.1.1, 1.1.2, 1.1.6, 1.2.1) to stay within the overall CSA WM019 budget control. The intent of this reallocation of funds is to allow for better accountability of the effort

(14) Installations were updated to reflect the current install schedule on Naval Tool for Interoperability Risk Assessment (NTIRA).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 3 / CRAW WM025
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.500	2.500	4.500	6.000	4.590	18.090
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.500	2.500	4.500	6.000	4.590	18.090
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**2.500**	**4.500**	**6.000**	**4.590**	**18.090**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Compact Rapid Attack Weapon (CRAW) is a very lightweight torpedo that can double as a submarine countermeasure. In FY22 CRAW Submarine Integration begins procuring kits to integrate the CRAW into the external countermeasure launcher (ECL) assembly.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 3 / CRAW WM025
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CRAW WM025												
B Kits												
Recurring												
1.1.1) CRAW Integration - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.500	2 / 1.000	3 / 1.500	3 / 1.500	- / -	9 / 4.500
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.500*	*- / 1.000*	*- / 1.500*	*- / 1.500*	*- / 0.000*	*- / 4.500*
Subtotal: CRAW WM025	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 0.500*	*2 / 1.000*	*3 / 1.500*	*3 / 1.500*	*- / -*	*9 / 4.500*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.500*	*- / 1.000*	*- / 1.500*	*- / 1.500*	*- / 0.000*	*- / 4.500*
Installation												
Modification Item 1 of 1: CRAW WM025	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.500	- / 3.000	- / 4.500	- / 4.590	- / 13.590
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.500*	*- / 3.000*	*- / 4.500*	*- / 4.590*	*- / 13.590*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**2.500**	**4.500**	**6.000**	**4.590**	**18.090**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2210 / Submarine Acoustic Warfare System	**Modification Number / Title:** 3 / CRAW WM025
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CRAW WM025

Manufacturer Information

Manufacturer Name: New MFG - TBD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 7	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				May 2022	May 2023	May 2024	May 2025
Delivery Dates				May 2023	May 2024	May 2025	May 2026

Installation Information

Method of Implementation: [none specified]:: Installation Name: CRAW Integration

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.500	- / -	- / -	0 / 0.000	1 / 1.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.000	- / -	0 / 0.000	2 / 3.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.500	0 / 0.000	3 / 4.500
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.590	3 / 4.590
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.500	2 / 3.000	3 / 4.500	3 / 4.590	9 / 13.590

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	3	-	3	9
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	3	3	9

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	177.991	4.777	12.439	13.241	0.000	13.241	13.275	13.438	13.588	5.893	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	177.991	4.777	12.439	13.241	0.000	13.241	13.275	13.438	13.588	5.893	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**177.991**	**4.777**	**12.439**	**13.241**	**0.000**	**13.241**	**13.275**	**13.438**	**13.588**	**5.893**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.799	0.264	0.434	-	0.434	0.242	0.478	0.528	0.539	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In FY 2021 the AN/SLQ-25E will be going through design acceptance criteria, finalizing analysis on the Environmental Qualification Testing and initiating any Engineering Changes with the contractor on the 25E design. Testing of the software baseline for the AN/SLQ-25E using Design Qualification Units previously procured will be ongoing. The AN/SLQ-25C program will be continuing to install Engineering Changes (EC's) and support the sustainment of the 25C's in the fleet.

Surface Ship Torpedo Defense (SSTD) provides a layered torpedo defense capability to protect surface ships. Under the OPN appropriation, SSTD is comprised of the AN/SLQ-25 (NIXIE) system and the Torpedo Warning System (TWS). The TWS provides automated torpedo detection, classification, localization, and alertment capability. TWS is a component of the Anti-Torpedo Torpedo Defense System, a CVN based hard kill Torpedo Defense System. The AN/SLQ-25 (NIXIE) system provides towed persistent countermeasure capability. The SSTD OPN account currently funds engineering changes for the AN/SLQ-25 (NIXIE) variants.

WL101 AN/SLQ-25A UPGRADE KITS: Procures the upgrade of the AN/SLQ-25A (NIXIE) towed acoustic countermeasure system to the AN/SLQ-25C configuration. The AN/SLQ-25C enhances ship survivability against future torpedo threats.

WL106 AN/SLQ-25 ENGINEERING CHANGES (ECs): The AN/SLQ-25 NIXIE is the Navy's primary Surface Ship Torpedo Defense (SSTD) system, providing towed persistent torpedo countermeasure capability to protect over 180 surface ships, including hulls that are duel tow. This number continues to increase as the fleet increases. WL106, AN/SLQ-25 ENGINEERING CHANGES, consists of two major efforts that started in FY 2018. An FY19 Mark cancelled and planned ECs installs. ECs will continue in FY20: (1) Engineering Changes for AN/SLQ-25C and earlier variants and (2) continuation of the system technical insertion, started in FY 2018, that will result in the new configuration baseline, known as the AN/SLQ-25E. The following details each of the two major efforts. (1) Funding for AN/SLQ-25 Engineering Changes provides for hardware and software configuration changes to current production baselines to resolve emergent hardware obsolescence issues and software updates. These recurring efforts include investigation and resolution of AN/SLQ-25 Trouble Reports (TRs), including those resulting from service-identified issues resulting in operational downtime. These efforts are critical to the extension of the military service life of the system until modification of all AN/SLQ-25A/C systems to AN/SLQ-25E is complete. (2) As a result of hardware obsolescence issues with the AN/SLQ-25A/C baseline that have precluded the continued production of this variant. A technical insertion effort began in FY 2018 under the nomenclature AN/SLQ-25E, which now is a government design and Request For Proposal (RFP) release as a hybrid build to print/build to spec contract. The AN/SLQ-25E updates the hardware and software architecture to a Commercial Off The Shelf (COTS-based), open, and modular configuration. The nonrecurring design efforts completed by the Navy began in FY 2018. This supported the release of RFP that was released in third quarter FY 2019. In FY2020, two major Engineering Changes will continue to support the in-service ships. FY 2019 Marks delayed efforts for AN/SLQ 25E system test and integration. Procurement of AN/SLQ-25E system upgrade kits begins in FY 2022 to resolve AN/SLQ-25C obsolescence issues by back fitting systems in the existing fleet. In FY 21 the AN/SLQ-25E will be going through design acceptance criteria, finalizing analysis on the Environmental Qualification Testing and initiating any Engineering Changes with

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

the contractor on the 25E design. Testing of new software for the AN/SLQ-25E using Design Qualification Units previously procured. The AN/SLQ-25C program will be continuing to install EC's and support the sustainment of the 25C's in the fleet.

WL830 PRODUCTION ENGINEERING (IN-HOUSE): Funding provides specification preparation and validation, production planning, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance and Integrated Logistics Support (ILS) planning, review and evaluation of obsolescence issues, and coordination of government furnished information (GFI) and government furnished equipment (GFE).

WL840 QUALITY ASSURANCE: Funding provides for quality assurance efforts including conducting quality assurance reviews of the contractor and subcontractors, documentation indicating contractor conformity to product performance requirements, and review of objective quality evidence.

WL860 ACCEPTANCE TEST & ENGINEERING: Funding provides for production acceptance of contractor hardware. Acceptance testing includes government acceptance testing and Environmental Qualification Testing(EQT) in support of the AN/SLQ-25E development with operationally trained subject matter experts and software support engineers.

WL900 CONSULTING SERVICES: Funding provides for contractor support to the program office for production monitoring, installation planning and coordination support.

WL905 PRODUCTION ENGINEERING CONTRACTOR: Funding provides for production engineering tasks performed by the hardware contractor.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Surface Ship Torpedo Def (SSTD)				- / 156.934	- / -	- / -	- / -	- / -	- / -
P-3a	1 / WL106 ENGINEERING CHANGES (TBD)				- / 21.057	- / 4.777	- / 12.439	- / 13.241	- / 0.000	- / 13.241
P-40	**Total Gross/Weapon System Cost**				**- / 177.991**	**- / 4.777**	**- / 12.439**	**- / 13.241**	**- / 0.000**	**- / 13.241**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Surface Ship Torpedo Def (SSTD)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / WL106 ENGINEERING CHANGES (TBD)				- / 13.275	- / 13.438	- / 13.588	- / 5.893	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 13.275**	**- / 13.438**	**- / 13.588**	**- / 5.893**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
N/A

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)	Aggregated Items Title: Surface Ship Torpedo Def (SSTD)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) WL101 AN/SLQ-25A UPGRADE KITS																				
1.1) 25A Modification Kits	A		528,387.85	214	113.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) WL101 AN/SLQ-25A UPGRADE KITS			**-**	**-**	***113.075***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) WL103 AN/SLQ-25X (TWS COMPATIBLE SYSTEM) HARDWARE																				
2.1) WL103 AN/ SLQ-25X (TWS COMPATIBLE SYSTEM) HARDWARE	A		3,788K	1	3.788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) WL103 AN/SLQ-25X (TWS COMPATIBLE SYSTEM) HARDWARE			**-**	**-**	***3.788***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
3) WL104 AN-SLQ-25D EC-2 ()																				
3.1) AN-SLQ-25C EC-2 ()	A		13,447K	1	13.447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) WL104 AN-SLQ-25D EC-2 ()			**-**	**-**	***13.447***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4) WL105 AN-SLQ-25C CVN BATTLE SPARE																				
4.1) HARDWARE	A		-	-	1.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) WL105 AN-SLQ-25C CVN BATTLE SPARE			**-**	**-**	***1.500***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) WL106 ENGINEERING CHANGE																				
5.1) EC-1 UPDATE SLQ-25	A		-	-	2.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.2) TECH INSERTION EC SLQ-25	A		-	-	0.936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) WL106 ENGINEERING CHANGE			**-**	**-**	***3.036***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
6) WL830 PRODUCTION ENGINEERING																				
6.1) PRODUCTION ENGINEERING IN-HOUSE	A		-	-	13.281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) WL830 PRODUCTION ENGINEERING			**-**	**-**	***13.281***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7) WL840 QUALITY ASSURANCE																				
7.1) QUALITY ASSURANCE (IN-HOUSE)	A		-	-	1.264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.2) Torpedo Warning System (TWS) Quality Assurance	A		-	-	0.212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)	Aggregated Items Title: Surface Ship Torpedo Def (SSTD)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: 7) WL840 QUALITY ASSURANCE			-	-	***1.476***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8) WL860 ACCEPTANCE TEST AND ENGINEERING																				
8.1) ACCEPTANCE TESTING & ENGINEERING	A		-	-	1.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) TWS Acceptance Testing & Engineering	A		-	-	0.496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) WL860 ACCEPTANCE TEST AND ENGINEERING			-	-	***2.320***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9) WL900 SERVICES																				
9.1) CONSULTING SERVICES	A		-	-	2.869	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 9) WL900 SERVICES			-	-	***2.869***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10) WL905 PRODUCTION ENGINEERING CONTRACTOR																				
10.1) PRODUCTION ENGINEERING CONTRACTOR	A		-	-	2.142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) WL905 PRODUCTION ENGINEERING CONTRACTOR			-	-	***2.142***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	**156.934**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)	**Modification Number / Title:** 1 / WL106 ENGINEERING CHANGES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	21.057	4.777	12.439	13.241	0.000	13.241	13.275	13.438	13.588	5.893	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	21.057	4.777	12.439	13.241	0.000	13.241	13.275	13.438	13.588	5.893	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**21.057**	**4.777**	**12.439**	**13.241**	**0.000**	**13.241**	**13.275**	**13.438**	**13.588**	**5.893**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[WL106 Engineering Changes SLQ-25] WL106 AN/SLQ-25 ENGINEERING CHANGES: The AN/SLQ-25 NIXIE is the Navy's primary Surface Ship Torpedo Defense (SSTD) system, providing towed persistent torpedo countermeasure capability to protect over 180 surface ships, including hulls that are duel tow. This number continues to increase as the fleet increases. WL106, AN/SLQ-25 ENGINEERING CHANGES, consists of two major efforts that started in FY 2018. An FY19 Mark cancelled and planned ECs installs. ECs will continue in FY20: (1) Engineering Changes for AN/SLQ-25C and earlier variants and (2) continuation of the system technical insertion, started in FY 2018, that will result in the new configuration baseline, known as the AN/SLQ-25E. The following details each of the two major efforts. (1) Funding for AN/SLQ-25 Engineering Changes provides for hardware and software configuration changes to current production baselines to resolve emergent hardware obsolescence issues and software updates. These recurring efforts include investigation and resolution of AN/SLQ-25 Trouble Reports (TRs), including those resulting from service-identified issues resulting in operational downtime. These efforts are critical to the extension of the military service life of the system until modification of all AN/SLQ-25A/C systems to AN/SLQ-25E is complete. (2) As a result of hardware obsolescence issues with the AN/SLQ-25A/C baseline that have precluded the continued production of this variant. A technical insertion effort began in FY 2018 under the nomenclature AN/SLQ-25E, which now is a government design and Request For Proposal (RFP) release as a hybrid build to print/build to spec contract. The AN/SLQ-25E updates the hardware and software architecture to a Commercial Off The Shelf (COTS-based), open, and modular configuration. The nonrecurring design efforts completed by the Navy began in FY 2018. This supported the release of RFP that was released in third quarter FY 2019. In FY2020, two major Engineering Changes will continue to support the in-service ships. FY 2019 Marks delayed efforts for AN/SLQ 25E system test and integration. Procurement of AN/SLQ-25E system upgrade kits begins in FY 2022 to resolve AN/SLQ-25C obsolescence issues by back fitting systems in the existing fleet. In FY 21 the AN/SLQ-25E will be going through design acceptance criteria, finalizing analysis on the Environmental Qualification Testing and initiating any Engineering Changes with the contractor on the 25E design. Testing of new software for the AN/SLQ-25E using Design Qualification Units previously procured. The AN/SLQ-25C program will be continuing to install EC's and support the sustainment of the 25C's in the fleet.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)	**Modification Number / Title:** 1 / WL106 ENGINEERING CHANGES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: WL106 ENGINEERING CHANGES												
B Kits												
Recurring												
1.1.1) WL106 Engineering Changes SLQ-25 - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.836	5 / 3.120	3 / 1.908	1 / 0.649	Continuing	Continuing
1.1.2) WL106 ECPs - Organic (1)	- / -	- / -	- / 0.670	- / 1.129	- / -	- / 1.129	- / 0.774	- / 0.832	- / 0.960	- / 0.400	Continuing	Continuing
1.1.3) WL106 TECH INSERTION EC SLQ-25 - Organic	- / 0.718	- / 0.536	- / 0.654	- / 0.626	- / -	- / 0.626	- / 0.467	- / 0.533	- / -	- / 0.300	- / -	- / 3.834
1.1.4) WL106 EC-1 UPDATE SLQ-25 - Organic	- / 0.713	- / 0.713	- / 0.727	- / 0.908	- / -	- / 0.908	- / 0.597	- / 0.783	- / 0.864	- / 0.400	- / -	- / 5.705
Subtotal: Recurring	*- / 1.431*	*- / 1.249*	*- / 2.051*	*- / 2.663*	*- / -*	*- / 2.663*	*- / 3.674*	*- / 5.268*	*- / 3.732*	*- / 1.749*	*Continuing*	*Continuing*
Non-Recurring												
1.2.1) WL106 AN/SLQ-25 Tech Insertion - Non - Organic (2)	- / 13.590	- / 0.785	- / 4.408	- / 4.060	- / -	- / 4.060	- / 3.244	- / -	- / 1.200	- / 0.665	- / -	- / 27.952
1.2.2) WL106 AN/SLQ-25 Tech Insertion - Organic (3)	- / 4.206	- / 0.849	- / 1.260	- / 0.886	- / -	- / 0.886	- / 0.965	- / -	- / 0.854	- / 0.466	- / -	- / 9.486
Subtotal: Non-Recurring	*- / 17.796*	*- / 1.634*	*- / 5.668*	*- / 4.946*	*- / -*	*- / 4.946*	*- / 4.209*	*- / -*	*- / 2.054*	*- / 1.131*	*- / 0.000*	*- / 37.438*
Subtotal: WL106 ENGINEERING CHANGES	*- / 19.227*	*- / 2.883*	*- / 7.719*	*- / 7.609*	*- / -*	*- / 7.609*	*3 / 7.883*	*5 / 5.268*	*3 / 5.786*	*1 / 2.880*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 19.227*	*- / 2.883*	*- / 7.719*	*- / 7.609*	*- / -*	*- / 7.609*	*- / 7.883*	*- / 5.268*	*- / 5.786*	*- / 2.880*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) WL830 AN/SLQ-25 Production Engineering In House (4)	- / 0.514	- / 0.360	- / 1.607	- / 1.468	- / -	- / 1.468	- / 1.475	- / 1.461	- / 1.605	- / 0.272	Continuing	Continuing
2.2) WL840 AN/SLQ-25 Quality Assurance (5)	- / 0.204	- / 0.200	- / 0.861	- / 0.920	- / -	- / 0.920	- / 0.812	- / 0.752	- / 1.572	- / 0.368	Continuing	Continuing
2.3) WL860 AN/SLQ-25 Acceptance Test and Engineering (6)	- / 0.509	- / 0.329	- / 0.690	- / 0.744	- / -	- / 0.744	- / 0.736	- / 0.642	- / 0.890	- / 0.370	Continuing	Continuing
2.4) WL900 AN/SLQ-25 Consulting Services (7)	- / 0.255	- / 0.650	- / 1.100	- / 1.300	- / -	- / 1.300	- / 1.269	- / 0.970	- / 0.975	- / 0.300	Continuing	Continuing
2.5) WL905 AN/SLQ-25 Production Engineering Contractor (8)	- / 0.348	- / 0.355	- / 0.462	- / 1.200	- / -	- / 1.200	- / 1.100	- / 0.345	- / 0.360	- / 0.263	Continuing	Continuing
Subtotal: Support	*- / 1.830*	*- / 1.894*	*- / 4.720*	*- / 5.632*	*- / -*	*- / 5.632*	*- / 5.392*	*- / 4.170*	*- / 5.402*	*- / 1.573*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: WL106 ENGINEERING CHANGES	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.000	- / 2.400	- / 1.440	- / 0.490	- / 8.330
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.000*	*- / 2.400*	*- / 1.440*	*- / 0.490*	*- / 8.330*
Total												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)	**Modification Number / Title:** 1 / WL106 ENGINEERING CHANGES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total Cost (Procurement + Support + Installation)	**21.057**	**4.777**	**12.439**	**13.241**	**0.000**	**13.241**	**13.275**	**13.438**	**13.588**	**5.893**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)	**Modification Number / Title:** 1 / WL106 ENGINEERING CHANGES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: WL106 ENGINEERING CHANGES

Installation Information

Method of Implementation: [none specified]:: Installation Name: WL106 Engineering Changes SLQ-25

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.000	- / -	- / -	0 / 0.000	3 / 4.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.400	- / -	0 / 0.000	5 / 2.400
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.440	0 / 0.000	3 / 1.440
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.490	1 / 0.490
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.000	5 / 2.400	3 / 1.440	1 / 0.490	12 / 8.330

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	2	2	1	-	1	2	-	-	1	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	2	2	1	-	1	2	-	1	12

Method of Implementation (Organic): WL106 ECPs - Not Installed

Installation Quantity: 0

Footnotes:

(1) Numbers increased in FY 2021 in order to support the ISEA for ECPs and TRs for aging systems.

(2) The FY 21 supports AN/SLQ-25C Engineering Change updates not completed to reduce CASREPs and resolve parts obsolescence in the fleet; non-recurring engineering government design for the AN/SLQ-25E system hardware and software technical insertion; and hardware procurement for the government build of Design Qualification Units (DQU) used to support system integration and design validation.

(3) The decrease in FY 21 supports AN/SLQ-25C Engineering Change updates not completed to reduce CASREPs and resolve parts obsolescence in the fleet; non-recurring engineering government design for the AN/SLQ-25E system hardware and software technical insertion; and hardware procurement for the government build of Design Qualification Units (DQU) used to support system integration and design validation.

(4) Moved Support Costs to P-3a from P-40A to show all costs associated with Engineering Changes. In House Production Support decreases in FY 21 due to the parts obsolescence model forecasted in Engineering Change Proposals (ECPs) needed for the obsolete 25C system; and developing first article testing requirements prior to production supporting first article delivery.

(5) Quality Assurance funding increases in FY 21 to establish requirements for the AN/SLQ-25E production and finalize the Quality Assurance Plan with the vendor.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2213 / Surface Ship Torpedo Def (SSTD)	**Modification Number / Title:** 1 / WL106 ENGINEERING CHANGES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(6) The increase in FY 21 supports AN/SLQ-25E technology insertion and First Article Testing for Proof of Manufacture. The program will utilize subject matter experts to ensure industry can manufacture the 25E and prototype can be produced through government machine shops allowing earlier hands-on assessment of system hardware components used as schedule risk reduction strategy supporting system deliveries to the fleet.

(7) The increase in FY 21 supports AN/SLQ-25C software validation, software testing trouble reports and CASREPS.

(8) The increase in FY 21 executes validation and verification of First Article Production Unit in comparison to the government owned Technical Data Package (TDP).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2225 / Fixed Surveillance System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,741.597	293.731	438.944	193.446	213.000	406.446	357.862	270.979	431.826	458.594	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,741.597	293.731	438.944	193.446	213.000	406.446	357.862	270.979	431.826	458.594	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,741.597**	**293.731**	**438.944**	**193.446**	**213.000**	**406.446**	**357.862**	**270.979**	**431.826**	**458.594**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

[P40A / Classified (2225)]: Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

[P40A / Classified (222506)]: Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2225 / Fixed Surveillance System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Fixed Surveillance System				- / 1,741.597	- / 293.731	- / 438.944	- / 193.446	- / 213.000	- / 406.446
P-40	**Total Gross/Weapon System Cost**				**- / 1,741.597**	**- / 293.731**	**- / 438.944**	**- / 193.446**	**- / 213.000**	**- / 406.446**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

OCO:
Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2225 / Fixed Surveillance System	**Aggregated Items Title:** Fixed Surveillance System

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) Classified																				
1.1) Classified (2225)	A		-	-	1,648.682	-	-	286.732	-	-	432.073	-	-	186.440	-	-	213.000	-	-	399.440
1.2) Classified (222506)	A		-	-	92.915	-	-	6.999	-	-	6.871	-	-	7.006	-	-	-	-	-	7.006
Subtotal: 1) Classified			**-**	**-**	***1,741.597***	**-**	**-**	***293.731***	**-**	**-**	***438.944***	**-**	**-**	***193.446***	**-**	**-**	***213.000***	**-**	**-**	***406.446***
Total			**-**	**-**	**1,741.597**	**-**	**-**	**293.731**	**-**	**-**	**438.944**	**-**	**-**	**193.446**	**-**	**-**	**213.000**	**-**	**-**	**406.446**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2237 / SURTASS

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0204311N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	181.212	56.873	21.923	63.838	0.000	63.838	69.487	25.968	68.589	63.066	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	181.212	56.873	21.923	63.838	0.000	63.838	69.487	25.968	68.589	63.066	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**181.212**	**56.873**	**21.923**	**63.838**	**0.000**	**63.838**	**69.487**	**25.968**	**68.589**	**63.066**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	2.782	2.753	2.239	-	2.239	4.212	3.956	4.437	-	-	20.379
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2021 funding request was reduced by $3.000 million to account for the availability of prior year execution balances.

PROGRAM COVERAGE: Surveillance Towed Array Sensor System (SURTASS) is the mobile, tactical, and strategic arm of the Navy's undersea surveillance capability that provides deep ocean and littoral acoustic detection and cueing for tactical weapon platforms against diesel and nuclear submarines as well as surface vessels in any given Area of Operations worldwide. Dedicated Anti-Submarine Warfare (ASW) T-AGOS ships tow long acoustic arrays that collect acoustic data and relay that data to shore facilities via satellites for processing and fusion of the resulting contact data with other sensors. Currently, there are five Small Waterplane Area Twin Hull (SWATH) T-AGOS ships operating in the Pacific area. Ship configurations are:

T-AGOS 22 USNS LOYAL (1), a SWATH-P platform which supports passive operations using the TB-29A Twinline (TL-29A) array, providing improved detection and classification capability. This ship class uses the Integrated Common Processor (ICP) signal processing and display system common with the SSN Advanced Rapid Commercial Off the Shelf (COTS) Insertion (ARCI) Sonar Processing System;

Three (3) T-AGOS SWATH-P platforms, T-AGOS 19 USNS VICTORIOUS, T-AGOS 20 USNS ABLE, and T-AGOS 21 USNS EFFECTIVE, supporting passive/active operations, configured with the ICP processing and display system, the TL-29A array, and the Compact Low Frequency Active (CLFA) transmit capability;

One (1) Low Frequency Active (LFA) equipped ship, T-AGOS 23 USNS IMPECCABLE, a SWATH-A platform configured with the ICP processing and display system, the TL-29A array, and the Low Frequency Active (LFA) transmit capability. The active capability provides greatly improved detection against diesel submarines as well as the quiet nuclear submarine threat.

In addition to the five platforms described above, two (2) shore sites are configured with the ICP processing and display suites to receive the T-AGOS acoustic data via SHF satellite communication links. One of the two shore sites is equipped with three (3) SURTASS Team Trainers (STTs) to support Home Port Training Periods.

A cost sharing agreement with Japan also provides a shore site and two Japanese SWATH ships with similar capability to the T-AGOS SWATH-P ships for the Western Pacific region. The Japanese Auxiliary Ocean Surveillance (JAOS) ships have been upgraded to the TL-29A array. A third Japanese SWATH ship is planned for delivery in 2021 with mission equipment funding previously programmed.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2237 / SURTASS	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0204311N
Line Item MDAP/MAIS Code: N/A		

The Expeditionary Surveillance Towed Array Sensor System (SURTASS-E) provides a SURTASS passive capability packaged in ISO-Vans (ISO-International Organization for Standardization) for mobilization on Vessels of Opportunity (VOOs). It was developed as a Rapid Prototyping, Experimentation, and Demonstration (RPED) project, tasked to re-package, test, and demonstrate an expeditionary variant of the passive component of the SURTASS acoustic surveillance system that can be used as a surrogate for some of the SURTASS capabilities provided by traditional T-AGOS class vessels.

The primary reason for the increase in funding for FY21 and succeeding years is to support the procurement of four SURTASS-E RPED units, one each in FY21, FY22, FY24, and FY25. These SURTASS-E mission system shipsets consist of the towed array and winch set, ISO-Van/SURTASS Operations Center (SOC) integration set, ICP Processing set, Mission system integration set, and C4I set. These mission systems will be procured during these timeframes based upon initial non-recurring engineering efforts and vessel of opportunity (VOO) configuration evaluations accomplished under prior-year ONR RDTEN funding.

[P3A - 6 / VG007 - Field Changes/Modifications]: VG007
Field Changes/Modifications - Provides for correction of deficiencies identified by Fleet use, array support equipment, communications equipment, and replacement of aging/unsupportable equipment.

VG776
Installation of Equipment - Installation Agents: NIWC LANT, NIWC PAC, Military Sealift Command, and Lockheed Martin.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	**P-1 Line Item Number / Title:** 2237 / SURTASS

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** 0204311N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	1 / VG006 - Integrated Common Processor (N/A)				- / 56.209	- / 12.386	- / 11.432	- / 10.806	- / 0.000	- / 10.806
P-3a	5 / VG006 - SURTASS-E (TBD)				- / 0.000	- / 10.000	- / 0.000	- / 46.449	- / 0.000	- / 46.449
P-3a	2 / VG006 - TL-29A U.S. Twinline Arrays (N/A)				- / 75.151	- / 1.820	- / 1.860	- / 1.018	- / 0.000	- / 1.018
P-3a	3 / VG006 - J-AOS (N/A)				- / 15.000	- / 28.354	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / VG006 - SURTASS Team Trainer (N/A)				- / 12.061	- / 1.750	- / 4.500	- / 1.750	- / 0.000	- / 1.750
P-3a	6 / VG007 - Field Changes/Modifications (N/A)				- / 22.791	- / 2.563	- / 4.131	- / 3.815	- / 0.000	- / 3.815
P-40	**Total Gross/Weapon System Cost**				**- / 181.212**	**- / 56.873**	**- / 21.923**	**- / 63.838**	**- / 0.000**	**- / 63.838**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	1 / VG006 - Integrated Common Processor (N/A)				- / 15.805	- / 17.762	- / 16.529	- / 17.733	- / 3.700	- / 162.362
P-3a	5 / VG006 - SURTASS-E (TBD)				- / 45.034	- / 0.000	- / 42.497	- / 37.858	- / 0.000	- / 181.838
P-3a	2 / VG006 - TL-29A U.S. Twinline Arrays (N/A)				- / 1.935	- / 1.974	- / 2.013	- / 2.250	- / 0.000	- / 88.021
P-3a	3 / VG006 - J-AOS (N/A)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 43.354
P-3a	4 / VG006 - SURTASS Team Trainer (N/A)				- / 4.700	- / 1.950	- / 4.800	- / 1.850	Continuing	Continuing
P-3a	6 / VG007 - Field Changes/Modifications (N/A)				- / 2.013	- / 4.282	- / 2.750	- / 3.375	- / 0.000	- / 45.720
P-40	**Total Gross/Weapon System Cost**				**- / 69.487**	**- / 25.968**	**- / 68.589**	**- / 63.066**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY21 requests funding for Integrated Common Processor (ICP) units ($10.81M), $1.02M for additional TL-29A towed array refurbishments, $1.75M for SURTASS Team Trainers, $46.45M for an additional SURTASS-E system, and $3.82M for field changes and modifications for multi-year transition to an upgraded command and control (C2) system. Details provided in individual exhibit P-3As.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 1 / VG006 - Integrated Common Processor
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	56.209	12.386	11.432	10.806	0.000	10.806	15.805	17.762	16.529	17.733	3.700	162.362
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	56.209	12.386	11.432	10.806	0.000	10.806	15.805	17.762	16.529	17.733	3.700	162.362
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**56.209**	**12.386**	**11.432**	**10.806**	**0.000**	**10.806**	**15.805**	**17.762**	**16.529**	**17.733**	**3.700**	**162.362**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FY21 and out-year funding continues cyclical ICP technical refresh of hardware and software.

ICP system configuration varies from ship to ship depending upon the type of arrays used (passive only, or passive and active). Additionally, Tech refresh efforts and individual unit procurements and their related costs can be more significant in some years than others based on a wide range of factors, including end of life components that require refresh; the combination of Low Frequency Active (LFA) vs. Compact Low Frequency Active (CLFA) assets; the need to incorporate significant cyber security and program protection improvements to reduce existing and projected threat vectors as well as the overall program protection posture and related requirements; inspections and testing into a particular ICP system undergoing refresh; and the need to update Configuration Control Models (CCMs) or Engineering Measurements Program (EMP) systems for each major hardware refresh. Accordingly, the procurement and installation costs will vary from one platform to another, depending on the configuration and the ship.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 1 / VG006 - Integrated Common Processor
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Integrated Common Processor	**Modification Type:** N/A	**Related RDT&E PEs:** 0204311N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: VG006 - Integrated Common Processor												
B Kits												
Recurring												
1.1.1) Integrated Common Processor - NonOrganic [1]	35 / 43.575	7 / 9.185	7 / 8.631	6 / 8.656	- / -	6 / 8.656	10 / 13.205	10 / 14.262	10 / 12.959	10 / 13.983	- / -	95 / 124.456
Subtotal: Recurring	*- / 43.575*	*- / 9.185*	*- / 8.631*	*- / 8.656*	*- / -*	*- / 8.656*	*- / 13.205*	*- / 14.262*	*- / 12.959*	*- / 13.983*	*- / 0.000*	*- / 124.456*
Subtotal: VG006 - Integrated Common Processor	*35 / 43.575*	*7 / 9.185*	*7 / 8.631*	*6 / 8.656*	*- / -*	*6 / 8.656*	*10 / 13.205*	*10 / 14.262*	*10 / 12.959*	*10 / 13.983*	*- / -*	*95 / 124.456*
Subtotal: Procurement, All Modification Items	*- / 43.575*	*- / 9.185*	*- / 8.631*	*- / 8.656*	*- / -*	*- / 8.656*	*- / 13.205*	*- / 14.262*	*- / 12.959*	*- / 13.983*	*- / 0.000*	*- / 124.456*
Installation												
Modification Item 1 of 1: VG006 - Integrated Common Processor	- / 12.634	- / 3.201	- / 2.801	- / 2.150	- / 0.000	- / 2.150	- / 2.600	- / 3.500	- / 3.570	- / 3.750	- / 3.700	- / 37.906
Subtotal: Installation	*- / 12.634*	*- / 3.201*	*- / 2.801*	*- / 2.150*	*- / -*	*- / 2.150*	*- / 2.600*	*- / 3.500*	*- / 3.570*	*- / 3.750*	*- / 3.700*	*- / 37.906*
Total												
Total Cost (Procurement + Support + Installation)	**56.209**	**12.386**	**11.432**	**10.806**	**0.000**	**10.806**	**15.805**	**17.762**	**16.529**	**17.733**	**3.700**	**162.362**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 1 / VG006 - Integrated Common Processor

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: VG006 - Integrated Common Processor

Manufacturer Information

Manufacturer Name: Lockheed Martin — Manufacturer Location: VA

Administrative Leadtime *(in Months)*: 2 — Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026

Manufacturer Name: Various — Manufacturer Location: Various

Administrative Leadtime *(in Months)*: 2 — Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Integrated Common Processor

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	28 / 12.634	7 / 3.201	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	35 / 15.835
FY 2019	- / -	- / -	7 / 2.801	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 2.801
FY 2020	- / -	- / -	- / -	7 / 2.150	0 / 0.000	7 / 2.150	- / -	- / -	- / -	- / -	0 / 0.000	7 / 2.150
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.600	- / -	- / -	- / -	0 / 0.000	6 / 2.600
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.500	- / -	- / -	0 / 0.000	10 / 3.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.570	- / -	0 / 0.000	10 / 3.570
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.750	0 / 0.000	10 / 3.750
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.700	10 / 3.700
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	28 / 12.634	7 / 3.201	7 / 2.801	7 / 2.150	0 / 0.000	7 / 2.150	6 / 2.600	10 / 3.500	10 / 3.570	10 / 3.750	10 / 3.700	95 / 37.906

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 1 / VG006 - Integrated Common Processor
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: VG006 - Integrated Common Processor

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Integrated Common Processor

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	28	-	1	3	3	-	2	3	2	-	2	3	2	-	1	3	2	-	4	3	3	-	4	3	3	-	4	3	3	10	95
Out	26	2	1	-	3	3	2	-	3	2	2	-	3	2	1	3	2	-	4	3	3	-	4	3	3	-	4	3	3	10	95

Footnotes:

(1) ICP system configuration varies from ship to ship depending upon the type of arrays used (passive only, or passive and active). Additionally, Tech refresh efforts and individual unit procurements and their related costs can be more significant in some years than others based on a wide range of factors, including end of life components that require refresh; the combination of Low Frequency Active (LFA) vs. Compact Low Frequency Active (CLFA) assets; the need to incorporate significant cyber security and program protection improvements to reduce existing and projected threat vectors as well as the overall program protection posture and related requirements; inspections and testing into a particular ICP system undergoing refresh; and the need to update Configuration Control Models (CCMs) or Engineering Measurements Program (EMP) systems for each major hardware refresh. Accordingly, the procurement and installation costs will vary from one platform to another, depending on the configuration and the ship. To elaborate, the unit cost adjustment from FY20 to FY21 is not merely an inflation increase. This additional funding is required to accomplish the combined active/passive ICP variants and their related refresh efforts required in FY21. Due to the additional requirements associated with the FY21 units, particularly the need to update Configuration Control Models (CCMs) and Engineering Measurements Program (EMP) systems for each of the major hardware refreshes accomplished in FY21, unit costs increased approximately 25% in FY21. Cyber security requirements and program protection requirements are increasing, becoming more labor-intensive and hardware based, and demand that more frequent mitigation efforts be put into place. Additionally, the TI20 equipment that we plan to field in FY21 and FY22 provides additional computing power and storage necessary to support new capabilities, e.g., full array processing, in order to modernize the system to meet increasingly demanding Fleet requirements.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 5 / VG006 - SURTASS-E
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	10.000	0.000	46.449	0.000	46.449	45.034	0.000	42.497	37.858	0.000	181.838
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	10.000	0.000	46.449	0.000	46.449	45.034	0.000	42.497	37.858	0.000	181.838
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**10.000**	**0.000**	**46.449**	**0.000**	**46.449**	**45.034**	**0.000**	**42.497**	**37.858**	**0.000**	**181.838**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Expeditionary Surveillance Towed Array Sensor System (SURTASS-E) provides a SURTASS passive capability packaged in ISO-Vans (ISO-International Organization for Standardization) for mobilization on Vessels of Opportunity (VOOs). It was developed as a Rapid Prototyping, Experimentation, and Demonstration (RPED) project, tasked to re-package, test, and demonstrate an expeditionary variant of the passive component of the SURTASS acoustic surveillance system that can be used as a surrogate for some of the SURTASS capabilities provided by traditional T-AGOS class vessels. The $10M in FY19 provided for procurement of a production TL-29A Twin Line Towed Array plus supporting towed array assemblies and components for the SURTASS-E RPED system, required to support extended testing and development. Additional funding was added to FY21, FY22, FY24, and FY25 for procurement of one (1) production SURTASS-E system per year, with deliveries nominally planned 19 months after each procurement. Equipment to be delivered is initially provided as ready assets, and installed as needed.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2237 / SURTASS	Modification Number / Title: 5 / VG006 - SURTASS-E
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	
Models of Systems Affected: [No Model Specified]	Modification Type: TBD	Related RDT&E PEs: 0204311N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: VG006 - SURTASS-E												
B Kits												
Recurring												
1.1.1) SURTASS-E Arrays - NonOrganic	- / -	1 / 10.000	- / -	1 / 46.449	- / -	1 / 46.449	1 / 45.034	- / -	1 / 42.497	1 / 37.858	- / -	5 / 181.838
Subtotal: Recurring	*- / 0.000*	*- / 10.000*	*- / -*	*- / 46.449*	*- / -*	*- / 46.449*	*- / 45.034*	*- / -*	*- / 42.497*	*- / 37.858*	*- / 0.000*	*- / 181.838*
Subtotal: VG006 - SURTASS-E	*- / -*	*1 / 10.000*	*- / -*	*1 / 46.449*	*- / -*	*1 / 46.449*	*1 / 45.034*	*- / -*	*1 / 42.497*	*1 / 37.858*	*- / -*	*5 / 181.838*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 10.000*	*- / -*	*- / 46.449*	*- / -*	*- / 46.449*	*- / 45.034*	*- / -*	*- / 42.497*	*- / 37.858*	*- / 0.000*	*- / 181.838*
Installation												
Modification Item 1 of 1: VG006 - SURTASS-E	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**10.000**	**0.000**	**46.449**	**0.000**	**46.449**	**45.034**	**0.000**	**42.497**	**37.858**	**0.000**	**181.838**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 5 / VG006 - SURTASS-E

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: VG006 - SURTASS-E

Manufacturer Information

Manufacturer Name: LOCKHEED MARTIN | Manufacturer Location: SYRCACUSE, NY

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 19

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Sep 2019		Jun 2021	Jun 2022		Jun 2024	Jun 2025
Delivery Dates	Apr 2021		Jan 2023	Jan 2024		Jan 2026	Jan 2027

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: SURTASS-E Arrays

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	1 / 0.000	0 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	0 / 0.000	1 / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	0 / 0.000	1 / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	1 / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	1 / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	1 / 0.000	0 / 0.000	1 / 0.000	- / -	1 / 0.000	1 / 0.000	- / -	2 / 0.000	5 / -

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	2	5
Out	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	2	5

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 2 / VG006 - TL-29A U.S. Twinline Arrays
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	75.151	1.820	1.860	1.018	0.000	1.018	1.935	1.974	2.013	2.250	0.000	88.021
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	75.151	1.820	1.860	1.018	0.000	1.018	1.935	1.974	2.013	2.250	0.000	88.021
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**75.151**	**1.820**	**1.860**	**1.018**	**0.000**	**1.018**	**1.935**	**1.974**	**2.013**	**2.250**	**0.000**	**88.021**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The TL-29A Twinline is a shallow water variant of the common array produced by NAVSEA. The array consists of two (2) shorter array lengths and array support equipment, and is designed for increased surveillance capability in high clutter environments and littoral areas. Funding in FY21-FY25 is provided to refurbish existing TL-29A array legs. Support equipment includes ancillary test sets, array headline and roll control systems, tow cables, and array leader cables.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 2 / VG006 - TL-29A U.S. Twinline Arrays
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TL-29A Twinline Arrays	**Modification Type:** N/A	**Related RDT&E PEs:** 0204311N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: VG006 - TL-29A U.S. Twinline Arrays												
B Kits												
Recurring												
1.1.1) U.S. Twinline Arrays - NonOrganic (2)	12 / 74.251	1 / 1.820	1 / 1.860	1 / 1.018	- / -	1 / 1.018	1 / 1.935	1 / 1.974	1 / 2.013	1 / 2.250	- / -	19 / 87.121
Subtotal: Recurring	*- / 74.251*	*- / 1.820*	*- / 1.860*	*- / 1.018*	*- / -*	*- / 1.018*	*- / 1.935*	*- / 1.974*	*- / 2.013*	*- / 2.250*	*- / 0.000*	*- / 87.121*
Subtotal: VG006 - TL-29A U.S. Twinline Arrays	*12 / 74.251*	*1 / 1.820*	*1 / 1.860*	*1 / 1.018*	*- / -*	*1 / 1.018*	*1 / 1.935*	*1 / 1.974*	*1 / 2.013*	*1 / 2.250*	*- / -*	*19 / 87.121*
Subtotal: Procurement, All Modification Items	*- / 74.251*	*- / 1.820*	*- / 1.860*	*- / 1.018*	*- / -*	*- / 1.018*	*- / 1.935*	*- / 1.974*	*- / 2.013*	*- / 2.250*	*- / 0.000*	*- / 87.121*
Installation												
Modification Item 1 of 1: VG006 - TL-29A U.S. Twinline Arrays	- / 0.900	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.900
Subtotal: Installation	*- / 0.900*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.900*
Total												
Total Cost (Procurement + Support + Installation)	**75.151**	**1.820**	**1.860**	**1.018**	**0.000**	**1.018**	**1.935**	**1.974**	**2.013**	**2.250**	**0.000**	**88.021**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 2 / VG006 - TL-29A U.S. Twinline Arrays

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: VG006 - TL-29A U.S. Twinline Arrays

Manufacturer Information

Manufacturer Name: LOCKHEED MARTIN | Manufacturer Location: SYRACUSE, NY

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 19

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Jul 2020	Jul 2021	Jul 2022	Jul 2023	Jul 2024	Jul 2025	Jul 2026

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: U.S. Twinline Arrays

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	8 / 0.900	3 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 0.900
FY 2019	- / -	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2020	- / -	- / -	- / -	1 / 0.000	0 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	0 / 0.000	1 / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	0 / 0.000	1 / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	0 / 0.000	1 / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	1 / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 0.900	3 / 0.000	2 / 0.000	1 / 0.000	0 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	1 / 0.000	19 / 0.900

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	3	-	-	-	2	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	1	19
Out	8	-	-	-	3	-	-	-	2	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	1	19

Footnotes:

(2) The TL-29A Twinline is a shallow water variant of the common array produced by NAVSEA. The array consists of two shorter array lengths and array support equipment, and is designed for increased surveillance capability in high clutter environments and littoral areas. Support equipment procurement is for ancillary test sets, array headline and roll control systems, tow cable, and leader cables. Installation funding is not required for the support equipment. FY20-FY24 funds refurbishment of one (1) array leg per year, which is less costly than procurement of new arrays. Installation Remarks: Installation occurs on five T-AGOS platforms and a TASW SURTASS platform. Historically, an array is lost or severely damaged every 18-24 months. The arrays require constant refurbishment and/or parts replacement due to the

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 2 / VG006 - TL-29A U.S. Twinline Arrays
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

harsh environmental conditions encountered. Without a ready asset in theater, if an array is lost or damaged, a SURTASS ship cannot deploy and execute its mission. Future assets to be delivered are initially provided as ready assets, and installed as needed.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 3 / VG006 - J-AOS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	15.000	28.354	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.354
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	15.000	28.354	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.354
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**15.000**	**28.354**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**43.354**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The J-AOS TL-29A procurement costs are associated with upgrading to a new array type and array support infrastructure, including two complete towed arrays and associated tow hardware and dry end equipment. A third rotational pool array, modules, dry side equipment and support equipment procurement was moved from FY21 to FY19. A third J-AOS ship is being constructed with commissioning scheduled for FY21. The ship requires outfitting with a mission system with procurement of a TL-29A array system and associated tow hardware, dry end equipment and installation. The program is funded with both FMS and OPN, and the $15M in FY17 and the $8.754M in FY19 represent the U.S. share of the total cost of the J-AOS TL-29A upgrade program. The U.S. cost share for the outfitting of the new J-AOS platform (J-3) is $19.6M. All installation costs are paid via FMS funds.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 3 / VG006 - J-AOS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** N/A	**Related RDT&E PEs:** 02040311N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: VG006 - J-AOS												
B Kits												
Recurring												
1.1.1) J-AOS - NonOrganic	1 / 15.000	2 / 28.354	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 43.354
Subtotal: Recurring	*- / 15.000*	*- / 28.354*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 43.354*
Subtotal: VG006 - J-AOS	*1 / 15.000*	*2 / 28.354*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*3 / 43.354*
Subtotal: Procurement, All Modification Items	*- / 15.000*	*- / 28.354*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 43.354*
Installation												
Modification Item 1 of 1: VG006 - J-AOS	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*
Total												
Total Cost (Procurement + Support + Installation)	**15.000**	**28.354**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**43.354**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 3 / VG006 - J-AOS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: VG006 - J-AOS

Manufacturer Information

Manufacturer Name: LOCKHEED MARTIN | Manufacturer Location: SYRACUSE, NY

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 19

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018						
Delivery Dates	Jul 2020						

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: J-AOS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2019	- / -	- / -	- / -	2 / 0.000	0 / 0.000	2 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	2 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 0.000	- / -	2 / 0.000	0 / 0.000	2 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	3 / -

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 4 / VG006 - SURTASS Team Trainer
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	12.061	1.750	4.500	1.750	0.000	1.750	4.700	1.950	4.800	1.850	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	12.061	1.750	4.500	1.750	0.000	1.750	4.700	1.950	4.800	1.850	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**12.061**	**1.750**	**4.500**	**1.750**	**0.000**	**1.750**	**4.700**	**1.950**	**4.800**	**1.850**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The SURTASS Team Trainer (STT) provides SURTASS crews with three high fidelity synthetic and live playback training capabilities to support Home Port Training Periods (HPTP) and Pre-Deployment Certification Periods (PDCP). Each STT will receive a hardware tech refresh on a six-year cycle and receive a major software update installation on a two-year cycle, so that 3 STTs hardware tech refreshes and 9 major software installations would be performed over a given six-year period. Tech refresh and software updates for the STTs will continue on this cycle.
The 4-7% procurement cost growth between FY18, FY20, FY22, and FY24 accounts for the additional STT capabilities incorporated to provide operators with the means to address more sophisticated threat targets and environments.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 4 / VG006 - SURTASS Team Trainer
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SURTASS Team Trainer	**Modification Type:** N/A	**Related RDT&E PEs:** 0204311N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: VG006 - SURTASS Team Trainer												
B Kits												
Recurring												
1.1.1) SURTASS Team Trainer - NonOrganic	3 / 10.535	- / -	1 / 4.500	- / -	- / -	- / -	1 / 4.700	- / -	1 / 4.800	- / -	Continuing	Continuing
Subtotal: Recurring	*- / 10.535*	*- / -*	*- / 4.500*	*- / -*	*- / -*	*- / -*	*- / 4.700*	*- / -*	*- / 4.800*	*- / -*	*Continuing*	*Continuing*
Subtotal: VG006 - SURTASS Team Trainer	*3 / 10.535*	*- / -*	*1 / 4.500*	*- / -*	*- / -*	*- / -*	*1 / 4.700*	*- / -*	*1 / 4.800*	*- / -*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 10.535*	*- / -*	*- / 4.500*	*- / -*	*- / -*	*- / -*	*- / 4.700*	*- / -*	*- / 4.800*	*- / -*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: VG006 - SURTASS Team Trainer	- / 1.526	- / 1.750	- / 0.000	- / 1.750	- / 0.000	- / 1.750	- / 0.000	- / 1.950	- / 0.000	- / 1.850	- / 0.000	- / 8.826
Subtotal: Installation	*- / 1.526*	*- / 1.750*	*- / -*	*- / 1.750*	*- / -*	*- / 1.750*	*- / -*	*- / 1.950*	*- / -*	*- / 1.850*	*- / 0.000*	*- / 8.826*
Total												
Total Cost (Procurement + Support + Installation)	**12.061**	**1.750**	**4.500**	**1.750**	**0.000**	**1.750**	**4.700**	**1.950**	**4.800**	**1.850**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 4 / VG006 - SURTASS Team Trainer
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: VG006 - SURTASS Team Trainer

Manufacturer Information

Manufacturer Name: NSWC CD	Manufacturer Location: BETHESDA, MD
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 14

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Jan 2020		Jan 2022		Jan 2024	
Delivery Dates		Feb 2021		Feb 2023		Feb 2025	

Manufacturer Name: Lockheed Martin	Manufacturer Location: VA
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 14

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Jan 2020		Jan 2022		Jan 2024	
Delivery Dates		Feb 2021		Feb 2023		Feb 2025	

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: SURTASS Team Trainer

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 1.526	1 / 1.750	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.276
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	1 / 1.750	0 / 0.000	1 / 1.750	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.750
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.950	- / -	- / -	0 / 0.000	1 / 1.950
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.850	0 / 0.000	1 / 1.850
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 1.526	1 / 1.750	- / -	1 / 1.750	0 / 0.000	1 / 1.750	- / -	1 / 1.950	- / -	1 / 1.850	0 / 0.000	6 / 8.826

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	2	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	6
Out	2	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	6

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 6 / VG007 - Field Changes/Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	22.791	2.563	4.131	3.815	0.000	3.815	2.013	4.282	2.750	3.375	0.000	45.720
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	22.791	2.563	4.131	3.815	0.000	3.815	2.013	4.282	2.750	3.375	0.000	45.720
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**22.791**	**2.563**	**4.131**	**3.815**	**0.000**	**3.815**	**2.013**	**4.282**	**2.750**	**3.375**	**0.000**	**45.720**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Field Changes/Modifications for correction of deficiencies identified by Fleet use, array support, communications equipment and replacement of aging/unsupportable equipment. Additional FY21-FY25 funding will facilitate transition to an upgraded command and control system, including installation of the Consolidated Afloat Network Enterprise System (CANES). Other aging End-of-life systems, including Global Command and Control System-Maritime (GCCS-M), UHF Line-of-sight Satellite (LOS/SAT), and ship's gyros will need to be replaced in order to ensure continuity of operations should the primary acoustic path to shore become inoperable.
C4I system configurations being procured vary, resulting in the variability in individual unit costs across the fiscal years.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 6 / VG007 - Field Changes/Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Field Changes/ Modifications	**Modification Type:** N/A	**Related RDT&E PEs:** 0204311N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: VG007 - Field Changes/ Modifications												
B Kits												
Recurring												
1.1.1) Field Changes/Modifications - NonOrganic	78 / 18.127	5 / 2.157	5 / 3.754	5 / 3.468	- / -	5 / 3.468	5 / 1.513	5 / 3.782	5 / 2.250	5 / 2.875	- / -	113 / 37.926
Subtotal: Recurring	*- / 18.127*	*- / 2.157*	*- / 3.754*	*- / 3.468*	*- / -*	*- / 3.468*	*- / 1.513*	*- / 3.782*	*- / 2.250*	*- / 2.875*	*- / 0.000*	*- / 37.926*
Subtotal: VG007 - Field Changes/Modifications	*78 / 18.127*	*5 / 2.157*	*5 / 3.754*	*5 / 3.468*	*- / -*	*5 / 3.468*	*5 / 1.513*	*5 / 3.782*	*5 / 2.250*	*5 / 2.875*	*- / -*	*113 / 37.926*
Subtotal: Procurement, All Modification Items	*- / 18.127*	*- / 2.157*	*- / 3.754*	*- / 3.468*	*- / -*	*- / 3.468*	*- / 1.513*	*- / 3.782*	*- / 2.250*	*- / 2.875*	*- / 0.000*	*- / 37.926*
Installation												
Modification Item 1 of 1: VG007 - Field Changes/ Modifications	- / 4.664	- / 0.406	- / 0.377	- / 0.347	- / 0.000	- / 0.347	- / 0.500	- / 0.500	- / 0.500	- / 0.500	- / 0.000	- / 7.794
Subtotal: Installation	*- / 4.664*	*- / 0.406*	*- / 0.377*	*- / 0.347*	*- / -*	*- / 0.347*	*- / 0.500*	*- / 0.500*	*- / 0.500*	*- / 0.500*	*- / 0.000*	*- / 7.794*
Total												
Total Cost (Procurement + Support + Installation)	**22.791**	**2.563**	**4.131**	**3.815**	**0.000**	**3.815**	**2.013**	**4.282**	**2.750**	**3.375**	**0.000**	**45.720**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 6 / VG007 - Field Changes/Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: VG007 - Field Changes/Modifications

Manufacturer Information

Manufacturer Name: NIWC PAC				Manufacturer Location: San Diego, CA			
Administrative Leadtime *(in Months)*: 2				Production Leadtime *(in Months)*: 10			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024
Delivery Dates	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025
Manufacturer Name: NIWC LANT				Manufacturer Location: Charleston, SC			
Administrative Leadtime *(in Months)*: 2				Production Leadtime *(in Months)*: 10			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024
Delivery Dates	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025
Manufacturer Name: Lockheed Martin				Manufacturer Location: VA			
Administrative Leadtime *(in Months)*: 2				Production Leadtime *(in Months)*: 10			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023	Nov 2024
Delivery Dates	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Field Changes/Modifications

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	78 / 4.664	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	78 / 4.664
FY 2019	- / -	5 / 0.406	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.406
FY 2020	- / -	- / -	5 / 0.377	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.377
FY 2021	- / -	- / -	- / -	5 / 0.347	0 / 0.000	5 / 0.347	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.347
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	- / -	- / -	0 / 0.000	5 / 0.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	- / -	0 / 0.000	5 / 0.500
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	0 / 0.000	5 / 0.500
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	0 / 0.000	5 / 0.500
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	78 / 4.664	5 / 0.406	5 / 0.377	5 / 0.347	0 / 0.000	5 / 0.347	5 / 0.500	5 / 0.500	5 / 0.500	5 / 0.500	0 / 0.000	113 / 7.794

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	**P-1 Line Item Number / Title:** 2237 / SURTASS	**Modification Number / Title:** 6 / VG007 - Field Changes/Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: VG007 - Field Changes/Modifications

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Field Changes/Modifications

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	78	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	113
Out	78	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	113

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0204228N	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,257.191	366.147	340.706	387.195	0.000	387.195	417.015	404.848	345.809	349.898	2,339.826	6,208.635
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,257.191	366.147	340.706	387.195	0.000	387.195	417.015	404.848	345.809	349.898	2,339.826	6,208.635
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,257.191**	**366.147**	**340.706**	**387.195**	**0.000**	**387.195**	**417.015**	**404.848**	**345.809**	**349.898**	**2,339.826**	**6,208.635**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	9.903	4.289	4.996	-	4.996	9.275	8.828	9.819	10.011	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SLQ-32(V) provides a family of modular ship born electronic warfare equipment which is installed on all surface combatants, aircraft carriers, amphibious ships and auxiliaries in the surface Navy. The system provides early detection, analysis, threat warning and protection from anti-ship missiles. The OPN 2312 budget supports the AN/SLQ-32(V)6 and AN/SLQ-32(V)7 variants through procurement and installation. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and comprise the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively and comprise the AN/SLQ-32(V)7 system.

TC056: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 1
The Surface Electronic Warfare (EW) Improvement Program (SEWIP) will develop a modern, highly capable family of EW systems by block upgrade of the current AN/SLQ-32 system that is robust in detecting and countering current and future threats and will extend the service life of AN/SLQ3-2(V) systems. Funding procures upgrades to the current AN/SLQ-32 system.

BLOCK 1B1 - SMALL SHIP ELECTRONIC MEASURES SYSTEM (SSESM):
Small Ship Electronic Support Measures System (SSESM) provides Specific Emitter Identification (SEI) capability to various ships/ship classes in a stand-alone configuration.

BLOCK 1B2 - FEDERATED SPECIFIC EMITTER IDENTIFICATION (SEI):
The federated SEI, consisting of SEI hardware plus an ICAD modification kit, fully integrates SEI functionality with the ICAD/Q-70 console.

BLOCK 1B3 - HIGH GAIN HIGH SENSITIVITY (HGHS):
High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Engineering Change Proposal (ECP) funding is to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The SEWIP Block 1B3 and Block 2 units are installed conjunctively to compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32 (V)6) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)7, production lead times for Block 1B3 are 15 months and these systems are then delivered to the Block 3 Integration Facility, NSWC Crane, 6 months (180 days) prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the NSCW Crane Integration Facility.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0204228N	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

TC059: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 2
Block 2 will provide AN/SLQ-32(V) an upgraded antenna, receiver, and combat systems interface. The upgrades will pace the threat, improve detection and accuracy and mitigate Electromagnetic Interference (EMI). The Block 2 hardware cost includes the SEWIP Block 2 ES system, Blanker-Video Mixer Group (AN/SLA-10D), Common Processing System, Common Display System, Liquid Conditioning Unit and Data Adaptation Processor. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 1B3 (FMP Block 2 for SLQ-32 (V)6 and systems installed with SEWIP Block 1B3 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)7, production lead times for Block 2 are 17 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months (180 days) prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the NSWC Crane Integration Facility.

TC060: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 3:
Block 3 will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ-32(V) system to keep pace with the threat. SEWIP Block 3 will provide a common EA capability to surface combatants (CVN, DDG, LHD) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new-construction platforms. The program builds on the EW Electronic Support (ES) capability delivered by Blocks 1 and 2. Development Status/Major Milestones are: Long Lead Material (LLM) was procured Q4 FY17, Milestone C Low Rate Initial Production (LRIP) Q1 FY19, IOT&E Q4 FY22, FRP is Q3 FY23. The SEWIP Block 1B3, Block 2 and Block 3 units compose the AN/SLQ-32(V)7 system. This may be accomplished as a conjunctive installation with all SEWIP components installed at the same time or as a non-conjunctive installation by installing the SEWIP Block 3 on a ship with SEWIP Block 1B3 and 2 previously installed.

Block 3T (AN/SLQ-59) will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ32(V) system to keep pace with the threat. Block 3T provides initial, limited interim capability of a focused application of the Naval Research Lab (NRL) Transportable EW Module (TEWM) system to meet an urgent operational needs (UON) statement.

TC5IN: FMP INSTALLATIONS
Shipboard installation of AN/SLQ-32(V) ECP/Field Changes and the Surface EW Improvements Blocks 1, 2 and 3.

TC6IN: NON-FMP INSTALLATIONS
Installation of AN/SLQ-32(V) ECP/Field Changes and the Surface EW Improvements Blocks 1, 2 and 3 at Shore Site Facilities.

[P40A / TC956 - USCG WMSL AN/SLQ-32 B(V)2]: TC956 - UNITED STATES COAST GUARD (USCG) WMSL AN/SLQ-32B(V)2
This supports USCG Maritime Security Cutter, Large (WMSL) 758 and 759 with AN/SLQ-32B(V)2 systems and is in accordance with the requirements of OPNAVINST 4000.79A for Navy Type - Navy Owned (NTNO) material. NTNO material is procured by the Navy and installed by the USCG.

[P40A / TC959 - SEWIP LITE FOR USCG SHIPS]: TC959 - SEWIP LITE FOR UNITED STATES COAST GUARD (USCG) SHIPS:
This details the requirements for SEWIP Block 1B2 and SEWIP Lite systems in support of USCG ships, including Offshore Patrol Cutter(OPC), WMSL and Heavy Polar Ice Breaker (HPIB). OPNAVINST 4000.79A for Navy Type - Navy Owned (NTNO) material applies. USN is responsible for equipment procurement & USCG is responsible for the install.

SEWIP Lite is a variant of the SEWIP Block 2 specifically tailored for the needs of small ships, such as Littoral Combat Shop (LCS), OPC, WMSL and HPIB to address fleet emergent needs for a robust, capable, and sustainable EW system that meets the space, weight and power limitations of these smaller ships.

[P40A / SEWIP LITE SHORE]: Note:
This line supports SEWIP Lite systems provide as Navy Type - Navy Owned to the USCG in accordance with OPNAVINST 4000.79A for NTNO material.

[P40A / SEWIP BLOCK 1B2 LITE SHORE INSTALL]: Note:
Shore Site Installs will be funded through the SEWIP Program.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0204228N	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P40A / TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)]: TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)
The Solid State Product Support Integrator (PSI) for Radio Frequency (RF) funding line supports the stand-up of this capability for select components of SEWIP Block 3. The Solid State PSI will provide engineering analysis and product support strategies as well as test and repair capabilities for the high band (HB) and low band (LB) transmit (Tx) and receive (Rx) components of SEWIP Block 3. Solid State PSI funding supports the procurements (investment expense) of HB and LB Tx and Rx module test and repair equipment in FY20-24. The Solid State PSI capability is shared with AMDR.

Note:

(1) TC961 Solid State PSI Procurements provide the following, Test Fixture and Test Set (FY21), Repair Equipment (FY22), and Calibration Equipment (FY23).

[P40A / TC960 - AN/SLQ-32 (V) TRAINING SYSTEMS]: TC960 - AN/SLQ-32 (V) TRAINING SYSTEMS
This TC supports the procurement and installation of training systems in support of the AN/SLQ-32(V)6 and (V)7 systems including the Multipurpose Reconfigurable Training System (MRTS) and Electronic Warfare Tactical Simulator (TACSIM). MRTS provides support for Fleet maintenance training for SEWIP Block 2 and SEWIP Block 3. MRTS simulates the tactical system's components and subcomponents necessary for training without requiring the procurement of a full SEWIP Block 1B3, Block 2, or Block 3 system. The TACSIM training system provides tactically-representative SEWIP operator training to EW operators, including simulation capabilities for SLQ-32(V)6, SLQ-32(V)7, SKCS, combat system simulation of SSDS and AEGIS, and system integration with the onboard Surface Electronic Warfare Team Trainer (SWWTT).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment

P-1 Line Item Number / Title:
2312 / AN/SLQ-32

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** 0204228N | **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	AN/SLQ-32	P-5a			- / 197.418	- / 29.146	- / 25.973	- / 41.347	- / -	- / 41.347
P-3a	1 / TC056 - BLOCK 1B2 FEDERATED SEI (SHIPALT/AIT)				- / 58.399	- / 1.581	- / 1.372	- / 3.495	- / 0.000	- / 3.495
P-3a	2 / TC056 - BLOCK 1B3 HGHS (SHIPALT/AIT)				- / 103.547	- / 24.378	- / 21.448	- / 20.348	- / 0.000	- / 20.348
P-3a	3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM (SHIPALT/AIT)				- / 829.639	- / 221.645	- / 246.674	- / 147.586	- / 0.000	- / 147.586
P-3a	4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM (SHIPALT/AIT)				- / 68.188	- / 89.397	- / 45.239	- / 174.419	- / 0.000	- / 174.419
P-40	**Total Gross/Weapon System Cost**				**- / 1,257.191**	**- / 366.147**	**- / 340.706**	**- / 387.195**	**- / 0.000**	**- / 387.195**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	AN/SLQ-32	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / TC056 - BLOCK 1B2 FEDERATED SEI (SHIPALT/AIT)				- / 2.195	- / 1.860	- / 0.436	- / 1.662	- / 5.736	- / 76.736
P-3a	2 / TC056 - BLOCK 1B3 HGHS (SHIPALT/AIT)				- / 22.993	- / 20.591	- / 12.273	- / 8.000	- / 15.341	- / 248.919
P-3a	3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM (SHIPALT/AIT)				- / 174.175	- / 167.208	- / 69.256	- / 55.231	- / 236.679	- / 2,148.093
P-3a	4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM (SHIPALT/AIT)				- / 195.430	- / 181.798	- / 248.528	- / 276.289	- / 1,957.491	- / 3,236.779
P-40	**Total Gross/Weapon System Cost**				**- / 417.015**	**- / 404.848**	**- / 345.809**	**- / 349.898**	**- / 2,339.826**	**- / 6,208.635**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY 2020 enacted amount includes congressional rescissions of $4.548 million to FY 2018 funding and $13.470 million to FY 2019 funding. However, these rescissions are not reflected on the P-40.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Aggregated Items Title: AN/SLQ-32

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) TC956 - USCG WMSL AN/SLQ-32 B(V)2																				
1.1) WMSL 758 AN/ SLQ-32 B(V)2	A		2,513K	1	2.513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) WMSL 759 AN/ SLQ-32 B(V)2 (†)	A		-	-	-	2,543K	1	2.543	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) TC956 - USCG WMSL AN/SLQ-32 B(V)2			**-**	**-**	***2.513***	**-**	**-**	***2.543***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) TC959 - SEWIP LITE FOR USCG SHIPS																				
2.1) SEWIP BLOCK 1B2 (1)(†)	A		378,000.00	1	0.378	456,000.00	1	0.456	-	-	-	393,000.00	9	3.537	-	-	-	393,000.00	9	3.537
2.2) SEWIP BLOCK 1B2 SHORE	A		370,000.00	2	0.740	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) SEWIP BLOCK 2 LITE (2)(†)	A		4,693K	1	4.693	5,600K	1	5.600	5,618K	4	22.472	5,599K	5	27.993	-	-	-	5,599K	5	27.993
2.4) SEWIP LITE SHORE	A		4,693K	2	9.386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6) SEWIP BLOCK 2 LITE SHORE INSTALL	A		414,500.00	2	0.829	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7) PRODUCTION SUPPORT	A		-	-	-	-	-	0.864	-	-	0.886	-	-	0.877	-	-	-	-	-	0.877
2.8) ENGINEERING CHANGE PROPOSALS (ECPs)	A		-	-	-	-	-	-	-	-	1.290	-	-	0.578	-	-	-	-	-	0.578
2.9) INCO SPARES	A		-	-	-	-	-	0.911	-	-	1.156	-	-	1.012	-	-	-	-	-	1.012
Subtotal: 2) TC959 - SEWIP LITE FOR USCG SHIPS			**-**	**-**	***16.026***	**-**	**-**	***7.831***	**-**	**-**	***25.804***	**-**	**-**	***33.997***	**-**	**-**	**-**	**-**	**-**	***33.997***
3) TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)																				
3.1) HIGH BAND TRANSMIT AND RECEIVE EQUIPMENT (†)	A		-	-	-	-	-	-	-	-	-	1,240K	2	2.479	-	-	-	1,240K	2	2.479
3.2) LOW BAND TRANSMIT AND RECEIVE EQUIPMENT (†)	A		-	-	-	-	-	-	-	-	-	920,500.00	2	1.841	-	-	-	920,500.00	2	1.841
Subtotal: 3) TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***4.320***	**-**	**-**	**-**	**-**	**-**	***4.320***
4) TC960 - AN/SLQ-32 (V) TRAINING SYSTEMS																				
4.1) SEWIP BLOCK 2 MRTS UNITS (†)	A		-	-	-	600,000.00	2	1.200	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Aggregated Items Title: AN/SLQ-32

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.2) SEWIP BLOCK 3 MRTS UNITS	A		-	-	-	-	-	-	-	-	-	705,000.00	2	1.410	-	-	-	705,000.00	2	1.410
4.3) SEWIP BLOCK 2 MRTS SOFTWARE NRE	A		-	-	3.752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) SEWIP BLOCK 3 MRTS SOFTWARE NRE	A		-	-	-	-	-	4.102	-	-	-	-	-	-	-	-	-	-	-	-
4.5) TACSIM(†)	A		-	-	-	-	-	-	169,000.00	1	0.169	180,000.00	9	1.620	-	-	-	180,000.00	9	1.620
Subtotal: 4) TC960 - AN/SLQ-32 (V) TRAINING SYSTEMS			**-**	**-**	***3.752***	**-**	**-**	***5.302***	**-**	**-**	***0.169***	**-**	**-**	***3.030***	**-**	**-**	**-**	**-**	**-**	***3.030***
5) TC056 - BLOCK 1B1 SSESM																				
5.2) FMP SHIP UNITS (Field Change)	A		111,307.23	166	18.477	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.3) PRODUCTION SUPPORT	A		-	-	8.704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.4) TECH REFRESH	A		-	-	3.479	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5) INSTALLATION	A		-	-	13.972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) TC056 - BLOCK 1B1 SSESM			**-**	**-**	***44.632***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
6) TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System																				
6.1) FMP SHIP UNITS	A		5,046K	15	75.692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.2) PRODUCTION SUPPORT	A		-	-	3.470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3) INSTALLATION	A		-	-	51.333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System			**-**	**-**	***130.495***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7) PB20 Rescissions																				
7.1) FY 2020 Rescisions (3)	A		-	-	-	-	-	13.470	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) PB20 Rescissions			**-**	**-**	***0.000***	**-**	**-**	***13.470***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**197.418**	**-**	**-**	**29.146**	**-**	**-**	**25.973**	**-**	**-**	**41.347**	**-**	**-**	**-**	**-**	**-**	**41.347**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) SEWIP Block 1B2 for Lite unit cost decrease since the FY 2020 President's Budget request for FY20-FY25 is the result of the qualification of a new tuner, which lowered the unit cost. This change was incorporated into the FY20 production cost.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Aggregated Items Title:** AN/SLQ-32

(2) At the FY 2020 President's Budget request, TC959 contained 2.6 and 2.7 for SEWIP Block 1B2 and Lite procurements for WMSL back fit as well as associated installation funding in 2.8 and 2.9. Under the NTNO agreement, the USN will be responsible for funding the procurement of these systems and the USCG will be responsible for the back fit installation cost. The FY 2021 President's Budget request 2.1 SEWIP Block 1B2 and 2.2 SEWIP Lite contain all back fit and forward fit quantity requirements. Installation costs for SEWIP Block 1B2 and Lite back fit have been removed from the FY 2021 President's Budget request.

(3) The FY 2020 Enacted amount includes congressional rescissions of $4.548 million to FY 2018 funding and $13.470 million to FY 2019 funding. However, these rescissions are not reflected on the P-40 and associated detail P-3a.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Aggregated Items: AN/SLQ-32

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) TC956 - USCG WMSL AN/SLQ-32 B(V)2												
1.2) WMSL 759 AN/SLQ-32 B(V)2		2019	Crane Organic / Crane, Indiana	C / FFP	None	Nov 2018	Sep 2019	1	2,543K	Y		Mar 2014
2) TC959 - SEWIP LITE FOR USCG SHIPS												
2.1) SEWIP BLOCK 1B2 (1)		2018	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Mar 2019	May 2020	1	378,000.00	Y		Mar 2016
2.1) SEWIP BLOCK 1B2 (1)		2019 (4)	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Mar 2019	Jun 2020	1	456,000.00	Y		Mar 2016
2.1) SEWIP BLOCK 1B2 (1)		2021	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Feb 2021	Apr 2022	9	393,000.00	Y		Mar 2016
2.3) SEWIP BLOCK 2 LITE (2)		2019	Lockheed Martin / Syracuse, NY	C / FFP	Washington Navy Yard	Dec 2018	Dec 2019	1	5,600K	Y		Mar 2015
2.3) SEWIP BLOCK 2 LITE (2)		2020	Lockheed Martin / Syracuse, NY	C / FFP	Washington Navy Yard	Mar 2020	Mar 2021	4	5,618K	Y		
2.3) SEWIP BLOCK 2 LITE (2)		2021	Lockheed Martin / Syracuse, NY	C / FFP	TBD	Mar 2021	Mar 2022	5	5,599K	Y		
3) TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)												
3.1) HIGH BAND TRANSMIT AND RECEIVE EQUIPMENT		2021	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Jan 2021	Feb 2022	2	1,240K	Y		
3.2) LOW BAND TRANSMIT AND RECEIVE EQUIPMENT		2021	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Jan 2021	Feb 2022	2	920,500.00	Y		
4) TC960 - AN/SLQ-32 (V) TRAINING SYSTEMS												
4.1) SEWIP BLOCK 2 MRTS UNITS		2019 (5)	ProActive Technologies / Oviedo, FL	C / FFP	NAWCTSD Orlando	Feb 2019	Mar 2020	2	600,000.00	Y		Dec 2017
4.5) TACSIM		2020	Simventions / Fredricksburg, VA	C / FFP	NSWC Dahlgren	Feb 2020	Jun 2020	1	169,000.00	Y		Mar 2019
4.5) TACSIM		2021	Simventions / Fredricksburg, VA	C / FFP	NSWC Dahlgren	Feb 2021	Jun 2021	9	180,000.00	Y		Mar 2019

Footnotes:

(4) TC959 - SEWIP LITE FOR USCG: This details the requirements for SEWIP Block 1B2 and SEWIP Lite systems in support of USCG OPC, WMSL and HPIB ships. OPNAVINST 4000.79A for Navy Type - Navy Owned (NTNO) material applies. SEWIP Lite is a variant of the SEWIP Block 2 specifically tailored for the needs of small ships, such as LCS, OPC, WMSL and HPIB to address fleet emergent needs for a robust, capable, and sustainable EW system that meets the space, weight and power limitations of these smaller ships

(5) TC960 - AN/SLQ-32(V) TRAINING SYSTEMS: This TC supports the procurement and installation of training systems in support of the AN/SLQ-32(V)6 and (V)7 systems including the MRTS and TACSIM. MRTS provides support for Fleet maintenance training for SEWIP Block 2 and SEWIP Block 3. MRTS simulates the tactical system's components and subcomponents necessary for training without requiring the procurement of a full SEWIP Block 1B3, Block 2, or Block 3 system. The TACSIM training system provides tactically-representative SEWIP operator training to EW operators, including simulation capabilities for SLQ-32(V)6, SLQ-32(V)7, SKCS, combat system simulation of SSDS and AEGIS, and system integration with the onboard Surface Electronic Warfare Team Trainer (SEWTT).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 1 / TC056 - BLOCK 1B2 FEDERATED SEI
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	58.399	1.581	1.372	3.495	0.000	3.495	2.195	1.860	0.436	1.662	5.736	76.736
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	58.399	1.581	1.372	3.495	0.000	3.495	2.195	1.860	0.436	1.662	5.736	76.736
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**58.399**	**1.581**	**1.372**	**3.495**	**0.000**	**3.495**	**2.195**	**1.860**	**0.436**	**1.662**	**5.736**	**76.736**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The federated SEI, consisting of SEI hardware plus an ICAD modification kit, fully integrates SEI functionality with the ICAD/Q-70 console. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems.

Notes:

(1) For FMP Block 1B2 systems, the production lead time is 20 months, 14 months for production and 6 months for systems integration prior to delivery to a ship for installation. The system integrator, NSWC Crane, conducts integration, testing, and preparation for shipment. The 6 month integration period is composed of 135 days for integration and testing of the SEWIP Blocks 1B2, 1B3 and 2 into an SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30).

(2) SEWIP Block 1B2 unit cost decrease since the FY 2020 President's Budget request for FY20-FY25 is the result of the qualification of new tuner, which lowered the unit cost. This change was incorporated into the FY20 production cost.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 1 / TC056 - BLOCK 1B2 FEDERATED SEI
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1: BLOCK 1B2 - FEDERATED SEI	**Modification Type:** SHIPALT/AIT	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI												
B Kits												
Recurring												
1.1.1) FMP SHIP UNITS - NonOrganic	66 / 24.480	2 / 0.911	2 / 0.772	3 / 1.180	- / -	3 / 1.180	2 / 0.802	1 / 0.410	- / -	2 / 0.852	1 / 0.435	79 / 29.842
1.1.2) NON-FMP SHORE SITE UNITS - NonOrganic	2 / 0.682	1 / 0.456	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.138
1.1.3) Installation and Check Out (INCO) Spares - Organic	- / -	- / 0.064	- / 0.264	- / 0.242	- / -	- / 0.242	- / 0.165	- / 0.196	- / 0.200	- / -	- / -	- / 1.131
Subtotal: Recurring	*- / 25.162*	*- / 1.431*	*- / 1.036*	*- / 1.422*	*- / - /*	*- / 1.422*	*- / 0.967*	*- / 0.606*	*- / 0.200*	*- / 0.852*	*- / 0.435*	*- / 32.111*
Subtotal: TC056 - BLOCK 1B2 FEDERATED SEI	*68 / 25.162*	*3 / 1.431*	*2 / 1.036*	*3 / 1.422*	*- / - /*	*3 / 1.422*	*2 / 0.967*	*1 / 0.606*	*- / 0.200*	*2 / 0.852*	*1 / 0.435*	*82 / 32.111*
Subtotal: Procurement, All Modification Items	*- / 25.162*	*- / 1.431*	*- / 1.036*	*- / 1.422*	*- / - /*	*- / 1.422*	*- / 0.967*	*- / 0.606*	*- / 0.200*	*- / 0.852*	*- / 0.435*	*- / 32.111*
Support *(All Modification Items)*												
2.1) Production Support	- / 8.405	- / 0.092	- / 0.127	- / 0.129	- / -	- / 0.129	- / 0.134	- / 0.155	- / 0.145	- / -	- / 1.473	- / 10.660
2.2) Tech Refresh	- / 5.739	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.122	- / 7.861
2.3) Engineering Change Proposals (ECPs)	- / -	- / 0.033	- / 0.035	- / 0.069	- / -	- / 0.069	- / 0.036	- / -	- / -	- / -	- / -	- / 0.173
Subtotal: Support	*- / 14.144*	*- / 0.125*	*- / 0.162*	*- / 0.198*	*- / - /*	*- / 0.198*	*- / 0.170*	*- / 0.155*	*- / 0.145*	*- / - /*	*- / 3.595*	*- / 18.694*
Installation												
Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI	- / 19.093	- / 0.025	- / 0.174	- / 1.875	- / 0.000	- / 1.875	- / 1.058	- / 1.099	- / 0.091	- / 0.810	- / 1.706	- / 25.931
Subtotal: Installation	*- / 19.093*	*- / 0.025*	*- / 0.174*	*- / 1.875*	*- / - /*	*- / 1.875*	*- / 1.058*	*- / 1.099*	*- / 0.091*	*- / 0.810*	*- / 1.706*	*- / 25.931*
Total												
Total Cost (Procurement + Support + Installation)	**58.399**	**1.581**	**1.372**	**3.495**	**0.000**	**3.495**	**2.195**	**1.860**	**0.436**	**1.662**	**5.736**	**76.736**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 1 / TC056 - BLOCK 1B2 FEDERATED SEI

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI

Manufacturer Information

Manufacturer Name: Crane Organic (6) | Manufacturer Location: Crane, Indiana

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 20

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Feb 2020	Feb 2021	Feb 2022	Feb 2023		Feb 2025
Delivery Dates	Dec 2020	Oct 2021	Oct 2022	Oct 2022	Oct 2024		Oct 2026

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP SHIP UNITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	63 / 18.653	0 / 0.015	0 / 0.119	3 / 1.067	0 / 0.000	3 / 1.067	- / -	- / -	- / -	- / -	0 / 0.000	66 / 19.854
FY 2019	- / -	0 / 0.010	0 / 0.045	2 / 0.711	0 / 0.000	2 / 0.711	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.766
FY 2020	- / -	- / -	0 / 0.010	0 / 0.082	0 / 0.000	0 / 0.082	2 / 0.714	- / -	- / -	- / -	0 / 0.000	2 / 0.806
FY 2021	- / -	- / -	- / -	0 / 0.015	0 / 0.000	0 / 0.015	0 / 0.124	3 / 1.089	- / -	- / -	0 / 0.000	3 / 1.228
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.010	0 / 0.086	2 / 0.755	0 / 0.000	2 / 0.851
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.005	0 / 0.044	1 / 0.378	1 / 0.427
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.011	2 / 0.876	2 / 0.887
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.452	1 / 0.452
Total	63 / 18.653	0 / 0.025	0 / 0.174	5 / 1.875	0 / 0.000	5 / 1.875	2 / 0.838	3 / 1.099	0 / 0.091	2 / 0.810	4 / 1.706	79 / 25.271

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	63	-	-	-	-	-	-	-	-	-	1	3	1	1	1	-	-	-	-	1	2	-	-	-	-	-	2	-	-	4	79
Out	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	1	-	-	1	-	-	1	1	-	6	79

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 1 / TC056 - BLOCK 1B2 FEDERATED SEI

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP SHORE SITE UNITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 0.440	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.440
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	- / -	0 / 0.000	1 / 0.220
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 0.440	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	- / -	0 / 0.000	3 / 0.660

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

Footnotes:

(6) Production lead-time updated at PB21 to be 20 months to reflect 14 months for production and 6 months for the integration time required prior to delivery of the system to a ship for installation.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 2 / TC056 - BLOCK 1B3 HGHS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	103.547	24.378	21.448	20.348	0.000	20.348	22.993	20.591	12.273	8.000	15.341	248.919
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	103.547	24.378	21.448	20.348	0.000	20.348	22.993	20.591	12.273	8.000	15.341	248.919
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**103.547**	**24.378**	**21.448**	**20.348**	**0.000**	**20.348**	**22.993**	**20.591**	**12.273**	**8.000**	**15.341**	**248.919**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Block 1B3: High Gain High Sensitivity (HGHS)
High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The SEWIP Block 1B3 and Block 2 units are installed conjunctively to compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32 (V)6) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)6 and (V)7, production lead time for Block 1B3 is 15 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months (A-180 days) prior to the start of the installation availability for integration into a SLQ-32 (V)6 or (V)7 system. 135 days is required for integration and testing with SEWIP Blocks 1B2 and 1B3 for SLQ-32 (V)6 and SEWIP Blocks 1B2, 1B3 and 3 for SLQ-32(V7), 15 days for preparation for shipment and delivery to the shipyard 30 days prior to the start of the availability (A-30).

Notes:

(1) Production Support provides for Government oversight of production, Government and Original Equipment Manufacturer (OEM) support of production related software and hardware problems, and engineering as well as integrated logistics support efforts in support of production and fielding.

(2) Engineering Change Proposal (ECP) funding is to address reliability, obsolescence, and other issues associated with production.

(3) Installation cost estimates are based on actual costs of installations to date.

(4) For FMP Block 1B3 systems, the production lead time is 21 months, 15 months for production and 6 months for systems integration prior to deliver to ship for installation. The systems integrator, NSWC Crane, conducts integrations, testing, and preparation for shipment. The 6 month integration period is composed of 135 days for integration and testing of the SEWIP Blocks 1B2, 1B2, and 2 into an SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30).

(5) Due to reduction of SEWIP Block 3 hardware funding in FY20, the FY20 procurement for FMP Block 1B3 for AN/SLQ-32(V)6 increased from 18 to 19 at the FY 2021 President's Budget request. Subsequently, the FY20 procurement for FMP Block 1B3 for AN/SLQ-32(V)7 decreased from 1 to 0. The installation of SEWIP Block 1B3 as a AN/SLQ-32(V)6 system will proceed as planned. This FY20 unit is being procured for LHD 5 for an FY23 installation.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 2 / TC056 - BLOCK 1B3 HGHS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1 - BLOCK 1B3 HGHS	**Modification Type:** SHIPALT/AIT	**Related RDT&E PEs:** 0604757N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS												
B Kits												
Recurring												
1.1.1) FMP BLOCK 1B3 for SLQ-32 (V)6 - NonOrganic	55 / 50.276	15 / 10.366	19 / 13.395	5 / 3.595	- / -	5 / 3.595	4 / 2.933	9 / 6.732	1 / 0.763	1 / 0.873	1 / 0.879	110 / 89.812
1.1.2) FMP BLOCK 1B3 for SLQ-32 (V)7 - NonOrganic	2 / 1.390	1 / 0.691	- / -	- / -	- / -	- / -	5 / 3.668	1 / 0.748	- / -	2 / 1.746	1 / 0.879	12 / 9.122
1.1.3) NON-FMP BLOCK 1B3 SHORE SITE - NonOrganic	6 / 7.775	1 / 0.691	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 8.466
1.1.4) BLK 1B3 GFE UNIT FOR BLK 3 OEM - NonOrganic	2 / 2.602	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.602
1.1.5) INCO Spares - Organic	- / 0.254	- / 1.592	- / 0.263	- / 1.273	- / -	- / 1.273	- / 0.776	- / 0.792	- / 0.807	- / 0.364	- / -	- / 6.121
Subtotal: Recurring	*- / 62.297*	*- / 13.340*	*- / 13.658*	*- / 4.868*	*- / - *	*- / 4.868*	*- / 7.377*	*- / 8.272*	*- / 1.570*	*- / 2.983*	*- / 1.758*	*- / 116.123*
Subtotal: TC056 - BLOCK 1B3 HGHS	*65 / 62.297*	*17 / 13.340*	*19 / 13.658*	*5 / 4.868*	*- / - *	*5 / 4.868*	*9 / 7.377*	*10 / 8.272*	*1 / 1.570*	*3 / 2.983*	*2 / 1.758*	*131 / 116.123*
Subtotal: Procurement, All Modification Items	*- / 62.297*	*- / 13.340*	*- / 13.658*	*- / 4.868*	*- / - *	*- / 4.868*	*- / 7.377*	*- / 8.272*	*- / 1.570*	*- / 2.983*	*- / 1.758*	*- / 116.123*
Support *(All Modification Items)*												
2.1) Production Support	- / 14.320	- / 2.446	- / 2.189	- / 2.223	- / -	- / 2.223	- / 2.315	- / 2.157	- / 2.005	- / 1.535	- / 3.141	- / 32.331
2.2) Tech Refresh	- / 0.438	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.438
2.3) Engineering Change Proposals (ECPs)	- / 1.611	- / 0.299	- / 0.320	- / 0.452	- / -	- / 0.452	- / 0.240	- / 0.303	- / 0.165	- / 0.130	- / 0.081	- / 3.601
Subtotal: Support	*- / 16.369*	*- / 2.745*	*- / 2.509*	*- / 2.675*	*- / - *	*- / 2.675*	*- / 2.555*	*- / 2.460*	*- / 2.170*	*- / 1.665*	*- / 3.222*	*- / 36.370*
Installation												
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS	- / 24.881	- / 8.293	- / 5.281	- / 12.805	- / 0.000	- / 12.805	- / 13.061	- / 9.859	- / 8.533	- / 3.352	- / 10.361	- / 96.426
Subtotal: Installation	*- / 24.881*	*- / 8.293*	*- / 5.281*	*- / 12.805*	*- / - *	*- / 12.805*	*- / 13.061*	*- / 9.859*	*- / 8.533*	*- / 3.352*	*- / 10.361*	*- / 96.426*
Total												
Total Cost (Procurement + Support + Installation)	**103.547**	**24.378**	**21.448**	**20.348**	**0.000**	**20.348**	**22.993**	**20.591**	**12.273**	**8.000**	**15.341**	**248.919**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 2 / TC056 - BLOCK 1B3 HGHS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS

Manufacturer Information

Manufacturer Name: General Dynamics AIS (7)	Manufacturer Location: Fair Lakes VA
Administrative Leadtime *(in Months)*: 0	Production Leadtime *(in Months)*: 21

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Oct 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024	Dec 2025	Dec 2026

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)6

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	28 / 22.865	9 / 6.514	10 / 1.452	8 / 5.510	0 / 0.000	8 / 5.510	- / -	- / -	- / -	- / -	0 / 0.000	55 / 36.341
FY 2019	- / -	0 / 1.642	0 / 1.011	7 / 5.080	0 / 0.000	7 / 5.080	8 / 5.619	- / -	- / -	- / -	0 / 0.000	15 / 13.352
FY 2020	- / -	- / -	0 / 2.492	0 / 0.721	0 / 0.000	0 / 0.721	8 / 5.982	11 / 7.881	- / -	- / -	0 / 0.000	19 / 17.076
FY 2021	- / -	- / -	- / -	0 / 0.084	0 / 0.000	0 / 0.084	0 / 0.195	2 / 1.534	3 / 2.192	- / -	0 / 0.000	5 / 4.005
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.171	0 / 0.135	4 / 2.923	- / -	0 / 0.000	4 / 3.229
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.043	0 / 0.121	1 / 1.067	2 / 1.701	6 / 4.562	9 / 7.494
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.045	0 / 0.035	1 / 0.760	1 / 0.840
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.045	1 / 0.811	1 / 0.856
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.909	1 / 0.909
Total	28 / 22.865	9 / 8.156	10 / 4.955	15 / 11.395	0 / 0.000	15 / 11.395	16 / 12.010	13 / 9.671	8 / 6.227	2 / 1.781	9 / 7.042	110 / 84.102

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	28	6	2	-	1	6	2	2	-	-	6	6	3	5	3	6	2	5	6	-	2	3	1	2	2	1	-	1	-	9	110
Out	12	-	-	4	1	2	1	8	6	2	3	4	-	6	7	3	6	4	4	4	2	3	3	1	2	2	2	5	1	12	110

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)7

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	0 / 0.137	0 / 0.188	2 / 1.378	0 / 0.000	2 / 1.378	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.703

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 2 / TC056 - BLOCK 1B3 HGHS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)7

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	0 / 0.138	0 / 0.032	0 / 0.000	0 / 0.032	1 / 0.702	- / -	- / -	- / -	0 / 0.000	1 / 0.872
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.129	0 / 0.188	3 / 2.261	2 / 1.491	0 / 0.000	5 / 4.069
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.045	0 / 0.035	1 / 0.760	1 / 0.840
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.045	2 / 1.685	2 / 1.730
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.874	1 / 0.874
Total	- / -	0 / 0.137	0 / 0.326	2 / 1.410	0 / 0.000	2 / 1.410	1 / 0.831	0 / 0.188	3 / 2.306	2 / 1.571	4 / 3.319	12 / 10.088

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	-	-	1	2	-	2	-	-	-	4	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	1	1	-	7	12

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP BLOCK 1B3 SHORE SITE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 1.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 1.656
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	- / -	0 / 0.000	1 / 0.220
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	6 / 1.656	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	- / -	0 / 0.000	7 / 1.876

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 2 / TC056 - BLOCK 1B3 HGHS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP BLOCK 1B3 SHORE SITE

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	6	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	7

Method of Implementation: SHIPALT/AIT:: Installation Name: BLK 1B3 GFE UNIT FOR BLK 3 OEM

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 0.360	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.360
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 0.360	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.360

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

Footnotes:

(7) Production lead-time updated at PB21 to be 21 months to reflect 15 months for production and 6 months for the integration time required prior to delivery of the system to a ship for installation. FY20 SEWIP Block 1B3 installations funding reduced due to Congressional action.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	829.639	221.645	246.674	147.586	0.000	147.586	174.175	167.208	69.256	55.231	236.679	2,148.093
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	829.639	221.645	246.674	147.586	0.000	147.586	174.175	167.208	69.256	55.231	236.679	2,148.093
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**829.639**	**221.645**	**246.674**	**147.586**	**0.000**	**147.586**	**174.175**	**167.208**	**69.256**	**55.231**	**236.679**	**2,148.093**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Block 2 will provide AN/SLQ-32(V) an upgraded antenna, receiver, and combat systems interface. The upgrades will pace the threat, improve detection and accuracy and mitigate Electromagnetic Interference (EMI). The Block 2 hardware cost includes the SEWIP Block 2 ES system, Blanker-Video Mixer Group (AN/SLA-10D), Common Processing System, Common Display System, Liquid Conditioning Unit and Data Adaptation Processor. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 1B3 (FMP Block 2 for SLQ-32 (V)6) and systems installed with SEWIP Block 1B3 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)6 and (V)7, the production lead time is 17 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months (A-180 days) prior to the start of the installation availability for integration into a SLQ-32 (V)6 or (V)7 system. 135 days is required for integration and testing with SEWIP Blocks 1B2 and 1B3 for SLQ-32 (V)6 and SEWIP Blocks 1B2, 1B3 and 3 for SLQ-32(V7), 15 days for preparation for shipment and delivery to the shipyard 30 days prior to the start of the availability (A-30).

Notes:

(1) Production Support provides for Government production oversight and original equipment manufacturer (OEM) support of production. This includes software, hardware problems, and integrated logistics support for production and fielding.

(2) Tech Refresh funding in FY21-FY25 will provide for the continued procurement and retrofit of the SEWIP Block 2 system. FY21 Tech Refresh funding increased from the FY 2020 President's Budget request to address upgraded Liquid Cooling Unit (LCU), implement enhanced cybersecurity safeguards and upgrade to the Next Generation Versa Module Europa (VME) system replacement. Tech Refresh of the LCU will address reliability and support cost drivers of the current configuration. Enhanced cybersecurity safeguards are required for the AN/SLQ-32(V)6 system to continue to be part of the integrated combat system. The Next Generation VME system replacement will update SEWIP Block 2 to VPX (also known as VME International Trade Association (VITA) standard 46) to correct VME bus bandwidth limitations, which will address obsolescence and reliability issues affecting fielded systems.

(3) Engineering Change Proposal (ECP) funding increases from FY20 to FY21 in the FY 2021 President's Budget request to address essential mission critical safety, reliability, production and performance issues associated with production and is estimated based on current list of approved Class I ECPs. There are currently 59 Class I ECPs approved for implementation. The FY21 amount will fund 13 of the highest priority ECPs, including correction of shock and vibration deficiencies, shelter improvements and modifications, single mode fiber conversions, Liquid Cooling Unit (LCU) production changes, data extraction enhancements and software integration.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(4) For FMP Block 2 systems, the production lead time is 23 months, 17 months for production and 6 months for systems integration prior to delivery to a ship for installation. The system integrator, NSWC Crane, conducts intefration, testing, and preparation for shipment. The 6 month integration period is composed of 135 days for integration and testing of the SEWIP Blocks 1B2, 1B3 and 2 into an SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30).

(5) Due to reduction of SEWIP Block 3 hardware funding in FY20, the FY20 procurement for FMP Block 2 for AN/SLQ-32(V)6 increased from 18 to 19 at the FY 2021 President's Budget request. Subsequently, the FY20 procurement for FMP Block 1B3 for AN/SLQ-32(V)7 decreased from 1 to 0. The installation of SEWIP Block 2 as a AN/SLQ-32(V)6 system will proceed as planned. This FY20 unit is being procured for LHD 5 for an FY23 installation.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TC059 SURFACE EW IMPROVEMENTS BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM	**Modification Type:** SHIPALT/AIT	**Related RDT&E PEs:** 0604757N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM												
B Kits												
Recurring												
1.1.1) FMP BLOCK 2 for SLQ-32 (V)6 - NonOrganic	55 / 553.335	15 / 136.695	19 / 173.508	5 / 46.570	- / -	5 / 46.570	4 / 38.000	9 / 87.210	1 / 9.884	1 / 10.053	1 / 10.053	110 / 1,065.308
1.1.2) FMP BLOCK 2 for SLQ-32 (V)7 - NonOrganic	2 / 18.054	1 / 9.113	- / -	- / -	- / -	- / -	5 / 47.500	1 / 9.690	- / -	2 / 20.106	1 / 10.053	12 / 114.516
1.1.3) NON-FMP BLK2 SHORE SITE UNITS - NonOrganic	6 / 43.485	1 / 9.113	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 52.598
1.1.4) BLK2 GFE FOR BLK3 OEM - NonOrganic	1 / 11.556	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 11.556
1.1.5) INCO Spares - Organic	- / 1.524	- / 5.681	- / 3.690	- / 3.807	- / -	- / 3.807	- / 3.978	- / 5.017	- / 0.580	- / 1.538	- / -	- / 25.815
Subtotal: Recurring	*- / 627.954*	*- / 160.602*	*- / 177.198*	*- / 50.377*	*- / - *	*- / 50.377*	*- / 89.478*	*- / 101.917*	*- / 10.464*	*- / 31.697*	*- / 20.106*	*- / 1,269.793*
Subtotal: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM	*64 / 627.954*	*17 / 160.602*	*19 / 177.198*	*5 / 50.377*	*- / - *	*5 / 50.377*	*9 / 89.478*	*10 / 101.917*	*1 / 10.464*	*3 / 31.697*	*2 / 20.106*	*130 / 1,269.793*
Subtotal: Procurement, All Modification Items	*- / 627.954*	*- / 160.602*	*- / 177.198*	*- / 50.377*	*- / - *	*- / 50.377*	*- / 89.478*	*- / 101.917*	*- / 10.464*	*- / 31.697*	*- / 20.106*	*- / 1,269.793*
Support *(All Modification Items)*												
2.1) Production Support	- / 47.890	- / 9.827	- / 6.576	- / 5.148	- / -	- / 5.148	- / 4.687	- / 2.630	- / 2.445	- / 2.887	- / 0.050	- / 82.140
2.2) Tech Refresh	- / 7.063	- / 2.500	- / 2.600	- / 7.954	- / -	- / 7.954	- / 2.112	- / 7.796	- / 8.129	- / -	- / 151.700	- / 189.854
2.3) Engineering Change Proposals (ECPs)	- / 16.754	- / 3.481	- / 8.109	- / 9.722	- / -	- / 9.722	- / 4.851	- / 2.533	- / 0.679	- / 0.993	- / 12.321	- / 59.443
Subtotal: Support	*- / 71.707*	*- / 15.808*	*- / 17.285*	*- / 22.824*	*- / - *	*- / 22.824*	*- / 11.650*	*- / 12.959*	*- / 11.253*	*- / 3.880*	*- / 164.071*	*- / 331.437*
Installation												
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM	- / 129.978	- / 45.235	- / 52.191	- / 74.385	- / 0.000	- / 74.385	- / 73.047	- / 52.332	- / 47.539	- / 19.654	- / 52.502	- / 546.863
Subtotal: Installation	*- / 129.978*	*- / 45.235*	*- / 52.191*	*- / 74.385*	*- / - *	*- / 74.385*	*- / 73.047*	*- / 52.332*	*- / 47.539*	*- / 19.654*	*- / 52.502*	*- / 546.863*
Total												
Total Cost (Procurement + Support + Installation)	**829.639**	**221.645**	**246.674**	**147.586**	**0.000**	**147.586**	**174.175**	**167.208**	**69.256**	**55.231**	**236.679**	**2,148.093**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Manufacturer Information

Manufacturer Name: Lockheed Martin [8] | Manufacturer Location: Syracuse, NY

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 23

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	May 2025
Delivery Dates	Nov 2020	Feb 2022	Feb 2023	Feb 2024	Feb 2025	Feb 2026	Feb 2027

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)6

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	28 / 123.654	9 / 35.652	10 / 32.262	8 / 25.734	0 / 0.000	8 / 25.734	- / -	- / -	- / -	- / -	0 / 0.000	55 / 217.302
FY 2019	- / -	0 / 8.846	0 / 5.244	7 / 25.873	0 / 0.000	7 / 25.873	8 / 26.249	- / -	- / -	- / -	0 / 0.000	15 / 66.212
FY 2020	- / -	- / -	0 / 12.925	0 / 13.991	0 / 0.000	0 / 13.991	8 / 30.955	11 / 36.814	- / -	- / -	0 / 0.000	19 / 94.685
FY 2021	- / -	- / -	- / -	0 / 1.934	0 / 0.000	0 / 1.934	0 / 3.814	2 / 8.003	3 / 10.241	- / -	0 / 0.000	5 / 23.992
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 3.945	0 / 1.746	4 / 13.655	- / -	0 / 0.000	4 / 19.346
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.986	0 / 2.448	1 / 10.460	2 / 9.688	6 / 21.310	9 / 44.892
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.026	0 / 0.454	1 / 3.552	1 / 5.032
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.047	1 / 4.086	1 / 5.133
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.446	1 / 5.446
Total	28 / 123.654	9 / 44.498	10 / 50.431	15 / 67.532	0 / 0.000	15 / 67.532	16 / 65.949	13 / 49.011	8 / 35.382	2 / 11.189	9 / 34.394	110 / 482.040

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	28	6	2	-	1	6	2	2	-	-	6	6	3	5	3	6	2	5	6	-	2	3	1	2	2	1	-	1	-	9	110
Out	12	-	-	4	1	2	1	8	6	2	3	4	-	6	7	3	6	4	4	4	2	3	3	1	2	2	2	5	1	12	110

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)7

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	0 / 0.737	0 / 0.822	2 / 6.434	0 / 0.000	2 / 6.434	- / -	- / -	- / -	- / -	0 / 0.000	2 / 7.993
FY 2019	- / -	- / -	0 / 0.938	0 / 0.419	0 / 0.000	0 / 0.419	1 / 3.281	- / -	- / -	- / -	0 / 0.000	1 / 4.638
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.959	0 / 3.321	3 / 11.131	2 / 6.964	0 / 0.000	5 / 24.375
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.026	0 / 0.454	1 / 3.552	1 / 5.032
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.047	2 / 9.321	2 / 10.368
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.235	1 / 5.235
Total	- / -	0 / 0.737	0 / 1.760	2 / 6.853	0 / 0.000	2 / 6.853	1 / 6.240	0 / 3.321	3 / 12.157	2 / 8.465	4 / 18.108	12 / 57.641

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	-	-	1	2	-	2	-	-	-	4	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	1	1	-	7	12

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP BLK2 SHORE SITE UNITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 5.466	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 5.466
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.858	- / -	- / -	- / -	0 / 0.000	1 / 0.858
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP BLK2 SHORE SITE UNITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	6 / 5.466	- / -	- / -	- / -	- / -	- / -	1 / 0.858	- / -	- / -	- / -	0 / 0.000	7 / 6.324

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7

Method of Implementation: SHIPALT/AIT:: Installation Name: BLK2 GFE FOR BLK3 OEM

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	1 / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.858
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	1 / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.858

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 3 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: BLK2 GFE FOR BLK3 OEM

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Footnotes:

(8) Production lead-time updated at PB21 to be 23 months to reflect 17 months for production and 6 months for the integration time required prior to delivery of the system to a ship for installation.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	68.188	89.397	45.239	174.419	0.000	174.419	195.430	181.798	248.528	276.289	1,957.491	3,236.779
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	68.188	89.397	45.239	174.419	0.000	174.419	195.430	181.798	248.528	276.289	1,957.491	3,236.779
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**68.188**	**89.397**	**45.239**	**174.419**	**0.000**	**174.419**	**195.430**	**181.798**	**248.528**	**276.289**	**1,957.491**	**3,236.779**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Block 3 will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ-32(V) system to keep pace with the threat. SEWIP Block 3 will provide a common EA capability to surface combatants (CVN, DDG, LHD) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new-construction platforms. The program builds on the EW Electronic Support (ES) capability delivered by Blocks 1 and 2. Development Status/Major Milestones are: Long Lead Material (LLM) was procured Q4 FY17, Milestone C Low Rate Initial Production (LRIP) Q1 FY19, IOT&E Q4 FY22, FRP is Q3 FY23. The SEWIP Block 1B3, Block 2 and Block 3 units compose the AN/SLQ-32(V)7 system. This may be accomplished as a conjunctive installation with all SEWIP components installed at the same time or as a non-conjunctive installation by installing the SEWIP Block 3 on a ship with SEWIP Block 1B3 and Block 2 previously installed.

Notes:

(1) Production Support provides for Government oversight of production, Government and original equipment manufacturer (OEM) support of production related software and hardware problems, and engineering as well as integrated logistics support efforts in support of production and fielding.

(2) INCO spares requirements are based on the updated Program Support Data sheets and SEWIP Block 3 hardware reliability projections.

(3) SEWIP Block 3 Engineering Change Proposal (ECP) funding amounts are estimated based on the current maturity of the design and the anticipated changes during production to address known reliability and other issues.

(4) LHD/CVN Electronic Attack (EA) Subsystem Design Change funding of $17.308M supports the Non-Recurring Engineering (NRE) for required hardware/software configuration modifications, associated documentation, and SSDS combat system integration constraints necessary for installation onboard CVN/LHD class ships. The NRE estimates are based on SEWIP Block 3 design and Navy engineering change actuals and will be completed on a fixed price contract CLIN. The CLIN must be fully funding at the time of award in accordance with the Full Funding Policy (FAR 232.702). The Quadrant configuration required for CVNs and LHDs is due to ship integration constraints including weight, center of gravity, field of view and mitigation of Electromagnetic Interferences. The CVN/LHD configuration will be installed in four sponsons vice the two sponsons on DDGs. This requires design changes to some of the current hardware configuration items including the cooling equipment.

(5) SEWIP Block 3 installation costs include the procurement of four (4) quad plates per shipset to mount the SEWIP Block 3 antennas. The quad plates are required two (2) years ahead of shipboard installation to support integration at NSWC Crane.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(6) The current SEWIP Block 3 development contract was awarded in FY15 and includes fixed price production options for FY17 and FY18 which were bid in a competitive environment prior to the start of system development. The program procured the FY17 and FY18 units at these contract prices. A new competitive contract will be awarded for FY19-FY23 production requirements. The estimated FY19-FY23 Block 3 unit prices are based on Engineering Development Model (EDM) actual cost data including an updated Bill of Material (BOM) and EDM purchase orders which reflect material cost growth and system complexities, including hardware ruggedization realized during development. Additionally, the FY20-24 unit prices include ancillary equipment required for installation.

(7) For FMP Block 3 systems, the production lead time is 30 months, 24 months for the production and 6 months for systems integration prior to delivery to ship for installation. The anticipated delivery rate is one SEWIP Block 3 system every 2 months. The systems integrator, NSWC Crane, conducts integration, testing, and preparation for shipment. The 6 month integration period is composed of 135 days for integration and testing of the SEWIP Blocks 1B2, 1B3 and 2 into and SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30).

(8) For additional clarity, the FY 2021 President's Budget request budget removed the procurement cost for the HES-C chillers from the Block 3 installation cost, and placed this cost in the Block 3 procurement cost. The procurement of the High Efficiency, Super Capacity (HES-C) chillers required to increase shipboard cooling for Block 3 operation was realigned in the budget exhibit from the installation line in the FY 2020 President's Budget request, to the recurring hardware section. The HES-C chiller unit upgrades procurements are required in the same year as the associated SEWIP Block 3 system. Funding for Design Services Allocation (DSA) is required beginning two years before the installation of the chiller, and the year of installation for each planned chiller upgrade. HES-C chiller unit upgrades are required for all LHD ships and certain DDG and CVN ships (10 of the 49 SEWIP Block 3 FMP systems.) LHD/CVN HES-C procurements are based on estimates from NSWC Philadelphia, the ISEA for the chiller.

(9) The SEWIP Block 3 installation is significantly more complex than the SEWIP Block 2 installation. The SEWIP Block 3 installation includes the fabrication and outfitting of steel sponson structures to house the arrays, electronic processing racks, and cooling equipment hardware. The installation also includes the cost for internal space reconfiguration to fit the four-bay prime power equipment.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TC060 SURFACE EW IMPROVEMENTS BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	**Modification Type:** SHIPALT/AIT	**Related RDT&E PEs:** 0604757N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM												
B Kits												
Recurring												
1.1.1) FMP BLOCK 3 (SMALL RCS) for SLQ-32(V)7 - NonOrganic	2 / 45.674	1 / 31.726	1 / 31.726	3 / 91.671	- / -	3 / 91.671	4 / 119.628	4 / 118.508	5 / 146.555	4 / 119.589	24 / 713.352	48 / 1,418.429
1.1.2) DDG HES-C Chiller Procurement - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.823	1 / 5.823
1.1.3) CVN/LHD Chiller Procurement - NonOrganic	- / -	- / -	- / -	1 / 9.364	- / -	1 / 9.364	2 / 19.103	- / -	- / -	1 / 10.135	5 / 54.335	9 / 92.937
1.1.4) NON-FMP BLK3 SHORE SITE UNITS - NonOrganic	- / -	1 / 31.726	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 31.726
1.1.5) Installation and Check Out (INCO) Spares - Organic	- / 10.234	- / 0.224	- / 1.152	- / 9.285	- / -	- / 9.285	- / 8.868	- / 6.336	- / 4.777	- / 3.976	- / 113.857	- / 158.709
Subtotal: Recurring	*- / 55.908*	*- / 63.676*	*- / 32.878*	*- / 110.320*	*- / - /*	*- / 110.320*	*- / 147.599*	*- / 124.844*	*- / 151.332*	*- / 133.700*	*- / 887.367*	*- / 1,707.624*
Subtotal: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	*2 / 55.908*	*2 / 63.676*	*1 / 32.878*	*4 / 110.320*	*- / - /*	*4 / 110.320*	*6 / 147.599*	*4 / 124.844*	*5 / 151.332*	*5 / 133.700*	*30 / 887.367*	*59 / 1,707.624*
Subtotal: Procurement, All Modification Items	*- / 55.908*	*- / 63.676*	*- / 32.878*	*- / 110.320*	*- / - /*	*- / 110.320*	*- / 147.599*	*- / 124.844*	*- / 151.332*	*- / 133.700*	*- / 887.367*	*- / 1,707.624*
Support *(All Modification Items)*												
2.1) Production Support	- / 11.196	- / 13.346	- / 4.880	- / 8.103	- / -	- / 8.103	- / 9.649	- / 11.074	- / 9.148	- / 7.623	- / 34.710	- / 109.729
2.2) Tech Refresh	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.146	- / 5.717	- / 183.331	- / 192.194
2.3) Engineering Change Proposals (ECP)	- / 1.084	- / 3.444	- / 2.644	- / 7.011	- / -	- / 7.011	- / 7.336	- / 8.383	- / 11.069	- / 4.455	- / 116.634	- / 162.060
2.4) LHD/CVN Electronic Attack (EA) Subsystem Design Change	- / -	- / -	- / -	- / 17.308	- / -	- / 17.308	- / -	- / -	- / -	- / -	- / -	- / 17.308
Subtotal: Support	*- / 12.280*	*- / 16.790*	*- / 7.524*	*- / 32.422*	*- / - /*	*- / 32.422*	*- / 16.985*	*- / 19.457*	*- / 23.363*	*- / 17.795*	*- / 334.675*	*- / 481.291*
Installation												
Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	- / 0.000	- / 8.931	- / 4.837	- / 31.677	- / 0.000	- / 31.677	- / 30.846	- / 37.497	- / 73.833	- / 124.794	- / 735.449	- / 1,047.864
Subtotal: Installation	*- / 0.000*	*- / 8.931*	*- / 4.837*	*- / 31.677*	*- / - /*	*- / 31.677*	*- / 30.846*	*- / 37.497*	*- / 73.833*	*- / 124.794*	*- / 735.449*	*- / 1,047.864*
Total												
Total Cost (Procurement + Support + Installation)	**68.188**	**89.397**	**45.239**	**174.419**	**0.000**	**174.419**	**195.430**	**181.798**	**248.528**	**276.289**	**1,957.491**	**3,236.779**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

Manufacturer Information

Manufacturer Name: NORTHROP GRUMMAN [9] Manufacturer Location: BALTIMORE, MD

Administrative Leadtime *(in Months)*: 0 Production Leadtime *(in Months)*: 30

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2020	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Sep 2022	Nov 2022	Sep 2023	Sep 2024	Sep 2025	Sep 2026	Sep 2027

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 3 (SMALL RCS) for SLQ-32(V)7

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	0 / 8.931	0 / 3.225	2 / 26.874	0 / 0.000	2 / 26.874	- / -	- / -	- / -	- / -	0 / 0.000	2 / 39.030
FY 2019	- / -	- / -	0 / 1.612	0 / 2.372	0 / 0.000	0 / 2.372	1 / 13.296	- / -	- / -	- / -	0 / 0.000	1 / 17.280
FY 2020	- / -	- / -	- / -	0 / 2.431	0 / 0.000	0 / 2.431	0 / 2.365	1 / 13.439	- / -	- / -	0 / 0.000	1 / 18.235
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 7.679	0 / 7.068	3 / 42.401	- / -	0 / 0.000	3 / 57.148
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 10.776	0 / 9.379	4 / 58.461	0 / 0.000	4 / 78.616
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 4.803	0 / 9.758	2 / 32.811	2 / 28.360	4 / 75.732
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 7.280	0 / 13.090	5 / 77.716	5 / 98.086
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 8.042	4 / 73.885	4 / 81.927
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.453	24 / 507.697	24 / 510.150
Total	- / -	0 / 8.931	0 / 4.837	2 / 31.677	0 / 0.000	2 / 31.677	1 / 23.340	1 / 36.086	3 / 68.818	6 / 114.857	35 / 687.658	48 / 976.204

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	1	-	-	1	2	-	3	-	3	-	35	48
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	1	2	-	42	48

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: DDG HES-C Chiller Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.823	1 / 5.823
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.823	1 / 5.823

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1

Method of Implementation: SHIPALT/AIT:: Installation Name: CVN/LHD Chiller Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.574	0 / 0.222	1 / 4.572	- / -	0 / 0.000	1 / 5.368
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.189	0 / 0.443	2 / 9.319	0 / 0.000	2 / 10.951
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.618	1 / 5.078	1 / 5.696

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: CVN/LHD Chiller Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 36.890	5 / 36.890
Total	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.574	0 / 1.411	1 / 5.015	2 / 9.937	6 / 41.968	9 / 58.905

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	6	9
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	8	9

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP BLK3 SHORE SITE UNITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.932	- / -	- / -	- / -	0 / 0.000	1 / 6.932
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.932	- / -	- / -	- / -	0 / 0.000	1 / 6.932

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	**P-1 Line Item Number / Title:** 2312 / AN/SLQ-32	**Modification Number / Title:** 4 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: NON-FMP BLK3 SHORE SITE UNITS

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Footnotes:

(9) Production lead-time updated at PB21 to be 30 months to reflect 24 months for production and 6 months for the integration time required prior to delivery of the system to a ship for installation.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,494.117	218.103	188.486	235.744	0.000	235.744	281.875	331.882	298.990	300.260	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,494.117	218.103	188.486	235.744	0.000	235.744	281.875	331.882	298.990	300.260	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,494.117**	**218.103**	**188.486**	**235.744**	**0.000**	**235.744**	**281.875**	**331.882**	**298.990**	**300.260**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	4.978	4.095	5.639	-	5.639	4.865	6.260	4.261	2.797	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P5 / 1U016 Spectral]: The Spectral Program is an incremental acquisition, Government Off-The-Shelf/Commercial Off-The-Shelf (GOTS/COTS) program that provides cryptologic signals exploitation capabilities designed to meet the requirements for shipboard cryptologic operations within the Ship's Signal Exploitation Space (SSES) aboard a variety of ship classes and shore facilities. The Spectral system will provide a mobile, passive capability to detect, classify, track, and determine the intent of enemy units through exploitation of their command and control emissions. The Spectral System will leverage existing architectures and support the integrated fires construct with Shipboard Combat Systems providing non-kinetic engagement to enhance combat effectiveness. The system will be scalable, reconfigurable to mission, modular, remotable and dynamically reprogrammable in response to new threats and capabilities. The Spectral System will deliver improved information/cyber warfare planning, exploitation, and attack capabilities across Naval platforms.

[P5 / 1U029 Information Warfare (IW) Training Equipment]: IW training equipment provides operator, unit or multi-unit level training on Ships Signal Exploitation Equipment (SSEE) Increment F (V) 7/8. This equipment enhances initial skills, provides refresher training and increases proficiency of the operator on the system through the generation and replay of operational scenarios by software simulation versus hardware simulation. IW training equipment is updated based on new variants of SSEE systems. Additionally, this line supports the procurement of the Stallion (formerly known as Cryptologic On-Line Trainer) hardware for Shipboard IW team training. Stallion is a web-based/Service Oriented Architecture (SOA) scenario training system that emulates Navy Tactical Signal Intelligence (SIGINT)/Information Operations (IO) system functionality. Stallion is delivered turnkey to the Center for Information Warfare Training (CIWTs).

[P5 / 1U060 ICADS]: Integrated Communications and Data System (ICADS) Increment II is a Chief of Naval Operations (CNO) directed mission critical system providing advanced simulation capabilities and limited back-up communications for Naval platforms. ICADS Increment II provides a scalable capability dependent on host platform requirements. Specific program details held at a higher classification.

[P5 / 1U014 SSEE Increment F (All Variants) ECP]: Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the SSEE Increment F program (All Variants) as well as incorporates Pre-Planned Product Improvement (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and IO capabilities into the host systems. ECP's maintain and improve upon existing capability and relevance within a rapidly evolving threat environment. ECP equipment will also be used to supplement SSEE Family of Systems (FoS) to meet their respective scalable and modular capacities and meet platform mission requirements.

- Beginning in FY21, Next Generation Chassis cost element in the P-5 exhibit moved to a P-3a exhibit due to the increased number of systems being procured, and their associated cost.

- In-line Blade Kits address obsolescence and resolve cybersecurity posturing while workstation upgrades place necessary technology updates to maximized operator performance.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

- Intellian Antenna (formerly Inmarsat) Engineering Change Proposal (ECP) replaces obsolete and end-of-life (EOL) antenna. This antenna fulfills a High Gain Aperture requirement across the fleet as well as expandability to GX coverage and availability to interchangeable Radio Frequency (RF) modules to support current Concept of Operations (CONOPs). This antenna will also increase Department of Defense's (DoD's) cybersecurity posture while ensuring all Ships Signal Exploitation Equipment (SSEE) systems and their components operate with latest supported hardware.
- Mission Module and ECP capabilities integrated into the SSEE Family of Systems (FoS) will enable maritime power projection by providing surface vessels the ability to disrupt, deny, degrade and defeat adversary (state and non-state) use of the radio frequency spectrum, improving the Fleet's ability to communicate and operate therein. These systems will be deployed supporting Assured Command and Control, Battlespace Awareness, and Integrated Fires.
- The Navy Tactical Data Network (NTDN) is a cybersecurity initiative enabling National/Tactical Integration with U.S. Navy Surface Cryptologic Systems by deploying NSAnet afloat with special SIGINT processing capabilities, enterprise services, and a mission data repository allowing automated synchronization with (National Security Agency (NSA) databases. This ECP will back-fit force-level SSEE Increment F(V)1/2 systems as well as integrating the shore component with CLASSIC REACH. NTDN Network & Information Technology (IT) infrastructure (afloat & shore) that will be connected to the Automated Digital Network System (ADNS) Increment 3 Routers, Switch, Tac Lane, Wide Area Network (WAN) Optimizer, & Server, Cross Domain Solutions (CDS) appliance between NTDN and SCI-Networks, Certification and Accreditation of SSEE FoS on peer-intranet NSA enclave afloat. In addition, an NTDN shore component will be deployed to support data flow to/from appropriate NSA data bases.
- Blade Kits address IBM/Lenovo server replacement (IBM servers have been sold to Lenovo, a foreign owned company).

[P3A / SSEE Increment F (All Variants)]: The SSEE Increment F (All Variants) program is an incremental acquisition, Commercial Off-The-Shelf/Government Off-The-Shelf (COTS/GOTS) program designed as the building block to improve the Information Warfare (IW) exploitation / IO / non-kinetic and subsequent tactical cryptologic capability across Navy surface combatant platforms. SSEE Increment F and its variants provides the afloat IW / cryptologist with IO / non-kinetic capabilities and subsequent threat identification and analysis of Communications Intelligence as well as queuing of radio direction finding assets. Equipment includes receivers, Radio Frequency management systems, recorders, audio distribution systems, computers, antennas and ancillary hardware. The system is upgraded incrementally as improvements are developed. The system design permits the rapid insertion of new and emerging Pre-Planned Product Improvement (P3I) to address the evolving threat and delivery through ECP. The system utilizes generic processor technology to counteract obsolescence issues with digital signal processing /field programmable gate array technologies and provide software receivers for ease of modification to deal with known and projected threat SOI. Automated signal acquisition and integrated radio direction finding are incorporated into the SSEE Increment F(V)1/2 system.

SSEE Increment F also includes a small form factor variant, SSEE Increment F(V)7/8 (previously referred to as Tactical Cryptologic Systems (TCS)), which meets IW / IO / non-kinetic and subsequent tactical cryptologic capability onboard Arleigh Burke Class Destroyers (DDG) Flight I or other designated platforms as a replacement for select SSEE Increment E variants and legacy signals intelligence systems and is both scalable and modular to allow tailorable configurations to meet platform or mission specific requirements.

[P3A - 2 / SSEE Modifications]: SSEE Modifications is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into SSEE systems. This capability is broken into two major components including Paragon which provides detection, collection, processing, Information Operations (IO) and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered today, and the Graywing subsystem which is an advanced Electronic Warfare system that will be integrated into SSEE systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board IO Countermeasure Red Flash" initiative (details held at a higher classification level).

[P3A - 3 / SSEE Inc F ECPs]: ECP/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) Increment F program (All Variants) as well as incorporates Pre-Planned Product Improvement (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and IO capabilities into the host systems. ECP's maintain and improve upon existing capability and relevance within a rapidly evolving threat environment.
- ECP equipment will also be used to supplement SSEE Family of Systems (FoS) to meet their respective scalable and modular capacities and meet platform mission requirements including Anti-Access Area Denial (A2AD), unique signal processing capability or exploitation functionality.
- The Next Generation Chassis modifications provide enhanced data processing and greater exposure to existing system services while creating a secondary physical hosting environment to meet constricting size, weight, power, and cooling requirements.
- Spectral Capability Drops include high maturity, developed Radio Frequency (RF) signal acquisition collection or exploitation capability or technique supporting host system functionality to maximize Fleet cryptologic resources.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

- ECP equipment will be used to enable SSEE Increment F(V)7/8 (previously referred to as Tactical Cryptologic System(TCS)) to meet its scalable and modular capacity. Currently this funds Blade Replacement Kits to address IBM/Lenovo server replacement (IBM servers have been sold to Lenovo, a foreign owned company). Currently this funds Blade Replacement Kits to address IBM/Lenovo server replacement (IBM servers have been sold to Lenovo, a foreign owned company).

[P3A - 3 / SSEE Increment F(V)7/8 Spectral Capability Drops]: Spectral Capability Drops include high maturity, developed Radio Frequency (RF) signal acquisition, collection or exploitation capabilities or techniques ready for Fleet insertion and operation separate from Prime Mission Product to maximize Fleet cryptologic resource readiness and functionality. These developed capabilities includes a mix of below deck or topside hardware and software components designed to meet an expanded Signal Intelligence (SIGINT) requirements base requested by the Joint, Navy and Strategic Intelligence office partners, but made available for immediate use by Fleet operators and maintainers.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-5	1 / Shipboard IW Exploit	P-5a, P-21			- / 741.676	- / 48.380	- / 33.878	- / 53.856	- / 0.000	- / 53.856
P-3a	1 / SSEE Increment F (All Variants) (TBD)				- / 656.642	- / 103.992	- / 80.972	- / 49.627	- / 0.000	- / 49.627
P-3a	2 / SSEE Modifications (Upgrade)				- / 95.799	- / 60.951	- / 67.674	- / 66.343	- / 0.000	- / 66.343
P-3a	3 / SSEE Inc F ECPs (TBD)				- / 0.000	- / 4.780	- / 5.962	- / 43.992	- / 0.000	- / 43.992
P-3a	4 / Mods ECP (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 21.926	- / 0.000	- / 21.926
P-40	**Total Gross/Weapon System Cost**				**- / 1,494.117**	**- / 218.103**	**- / 188.486**	**- / 235.744**	**- / 0.000**	**- / 235.744**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-5	1 / Shipboard IW Exploit	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / SSEE Increment F (All Variants) (TBD)				- / 83.601	- / 61.744	- / 21.188	- / 0.000	Continuing	Continuing
P-3a	2 / SSEE Modifications (Upgrade)				- / 81.841	- / 78.799	- / 25.603	- / 0.768	- / 0.000	- / 477.778
P-3a	3 / SSEE Inc F ECPs (TBD)				- / 44.887	- / 33.202	- / 27.228	- / 43.743	- / 4.143	- / 207.937
P-3a	4 / Mods ECP (TBD)				- / 20.839	- / 12.804	- / 5.456	- / 3.785	- / 0.800	- / 65.610
P-40	**Total Gross/Weapon System Cost**				**- / 281.875**	**- / 331.882**	**- / 298.990**	**- / 300.260**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The request from FY 2020 to FY 2021 increases by $47.258 million due to the following:

1) Ships Signal Exploitation Equipment Modifications (SSEE MODS) Graywing Next Generation system procurement starting in FY 2021

2) Developmental efforts transitioning to production and fielding Engineering Change Proposals (ECP):

- Spectral Capability Drops system procurements starting in FY 2021 for fielded SSEE Increment F systems will deliver fleet prioritized, matured, validated, and available capabilities developed for the full Spectral system
- Anti-Access Area Denial (A2AD) Kits system procurements starting in FY 2021, and
- Next Generation Chassis quantity increases from 10 in FY 2020 to 27 in FY 2021 to support afloat platforms.

3) Integrated Communications and Data Systems Increment II (ICADS Inc II) Production Representative Systems (PRS) contract.

The Shipboard IW budget supports SSEE Increment F, its variants, and (ECP) to maintain pace with modernization and signal threats; SSEE MODS; Integrated Communications and Data System (ICADS); and Navy Tactical Data Networks (NTDN). The SSEE Family of Systems (FoS) includes variants which introduce scalability and configuration modularity through a permanently installed host Below Deck Core system and Topside Infrastructure (Topside Antennas) supplemented with mission modules to meet platform mission requirements including Anti-Access Area Denial (A2AD), unique signal processing capability or exploitation functionality. Mission module and ECP capabilities integrated into the SSEE Systems will enable maritime power projection by providing surface vessels the ability disrupt, deny, degrade and defeat adversary (state and non-state) use of radio frequency spectrum, improving the Fleet's ability to communicate and operate therein. These systems will be deployed supporting Assured Command and Control, Battlespace Awareness, and Integrated Fires.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

SSEE Increment F procurement unit cost are identified by variant SSEE Increment F(V)1/2 and SSEE Increment F (V)7/8 (previously referred to as Tactical Cryptologic System (TCS)) to distinguish cost differences between the two variants.

As part of the National Security Agency's (NSA) "Secure the Network" & "Secure the Enterprise" initiatives, NSA & C10F (10th Fleet) requires all systems, including U.S. Navy Surface Cryptologic Systems to migrate to NSAnet. Navy Tactical Data Network (NTDN) is the cybersecurity response to enable National/Tactical Integration with US Navy Surface Cryptologic Systems by deploying NSAnet afloat with special SIGINT processing capabilities, enterprise services, and a mission data repository allowing automated synchronization with NSA databases.

Procurements are tied to ship availabilities balanced against respective production lead times. Unit Procurement Costs for SSEE Increment F (all variants) and SSEE Modification are based on contract quantity discounts; SSEE procurements are awarded with Ship's Signal Exploitation Equipment (SSEE) Other Procurement Navy (OPN), Shipbuilding and Conversion Navy (SCN), Foreign Military Sales (FMS), and Coast Guard procurement to achieve the best value for the government.

PROCUREMENT DATA:

Major FY21 funding will procure:
(6) SSEE Increment F(V)7/8 Ship - Below Deck and Core
(6) SSEE Increment F(V)7/8 Ship - Infrastructure
(27) SSEE Increment F(V)1/2&(V)7/8 - Next Generation Chassis
(9) Spectral Capability Drops
(30) Anti-Access, Area Denial (A2AD) Kits
(16) Graywing NextGen
(8) SSEE MODS Systems
(1) Information Warfare (IW) Training Equipment
(3) Integrated Communications and Data Systems (ICADS)
(4) NTDN/Classic Reach Systems
and Various Engineering Change Proposals (ECPs) and mission modules supporting host system functionality

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Item Number / Title [DODIC]:** 1 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	741.676	48.380	33.878	53.856	0.000	53.856
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	741.676	48.380	33.878	53.856	0.000	53.856
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**741.676**	**48.380**	**33.878**	**53.856**	**0.000**	**53.856**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - 1U013 SSEE Increment E ECP Cost																		
Recurring Cost																		
1.1.1) SSEE Inc E ECPs (Prior Years) (1)	-	-	309.995	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) Red Falcon Antennas(†)	80.500	20	1.610	82.000	10	0.820	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*311.605*	-	-	*0.820*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - 1U013 SSEE Increment E ECP Cost	**-**	**-**	***311.605***	**-**	**-**	***0.820***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - 1U029 Information Warfare (IW) Training Equipment Cost																		
Recurring Cost																		
3.1.1) Information Warfare (IW) Training Equipment(†)	1,087.333	18	19.572	3,040.000	1	3.040	3,091.000	1	3.091	3,144.000	1	3.144	-	-	0.000	3,144.000	1	3.144
Subtotal: Recurring Cost	-	-	*19.572*	-	-	*3.040*	-	-	*3.091*	-	-	*3.144*	-	-	*0.000*	-	-	*3.144*
Subtotal: Hardware - 1U029 Information Warfare (IW) Training Equipment Cost	**-**	**-**	***19.572***	**-**	**-**	***3.040***	**-**	**-**	***3.091***	**-**	**-**	***3.144***	**-**	**-**	***0.000***	**-**	**-**	***3.144***
Hardware - 1U060 ICADS Cost																		
Recurring Cost																		
4.1.1) ICADS(†) (2)	-	-	0.000	4,310.000	1	4.310	-	-	0.000	5,288.000	3	15.864	-	-	0.000	5,288.000	3	15.864
4.1.2) ICADS Infrastructure(†) (3)	-	-	0.000	-	-	0.000	-	-	0.000	1,762.667	3	5.288	-	-	0.000	1,762.667	3	5.288

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Item Number / Title [DODIC]: 1 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*4.310*	-	-	*0.000*	-	-	*21.152*	-	-	*0.000*	-	-	*21.152*
Subtotal: Hardware - 1U060 ICADS Cost	**-**	**-**	***0.000***	**-**	**-**	***4.310***	**-**	**-**	***0.000***	**-**	**-**	***21.152***	**-**	**-**	***0.000***	**-**	**-**	***21.152***
Hardware - 1U014 SSEE Increment F (All Variants) ECP Cost																		
Recurring Cost																		
5.1.1) SSEE Increment F (V)1/2 In-line Blade Kits(†)	669.778	18	12.056	689.000	5	3.445	700.550	3	2.102	-	-	0.000	-	-	0.000	-	-	0.000
5.1.2) SSEE Increment F (V)1/2 ECP - Processing Upgrades Workstations(†)	65.000	24	1.560	68.000	35	2.380	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.1.3) SSEE Increment F (V)1/2 ECP - Intellian Antenna(†) (4)	-	-	0.000	181.000	7	1.267	184.000	5	0.920	187.206	5	0.936	-	-	0.000	187.206	5	0.936
5.1.4) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits(†)	360.643	28	10.098	192.000	22	4.224	195.300	5	0.977	198.600	8	1.589	-	-	0.000	198.600	8	1.589
5.1.5) SSEE Increment F(V)7/8 ECP IO Equipment Modules(†)	701.150	20	14.023	724.000	6	4.344	736.300	5	3.682	748.828	6	4.493	-	-	0.000	748.828	6	4.493
5.1.6) SSEE Increment F(V)7/8 SSC-W ECP Modules(†)	547.000	11	6.017	560.700	6	3.364	570.100	5	2.851	579.807	6	3.479	-	-	0.000	579.807	6	3.479
5.1.7) SSEE Increment F(V)7/8 SSC-S ECP Modules(†)	298.727	11	3.286	306.167	6	1.837	311.300	5	1.557	316.647	6	1.900	-	-	0.000	316.647	6	1.900
5.1.8) SSEE Increment F(V)7/8 Red Falcon ECP Modules(†)	223.467	15	3.352	230.667	6	1.384	234.500	5	1.173	238.555	6	1.431	-	-	0.000	238.555	6	1.431
5.1.9) SSEE Increment F(V)7/8 Medusa ECP Modules(†)	286.308	13	3.722	294.500	6	1.767	299.500	5	1.498	304.623	6	1.828	-	-	0.000	304.623	6	1.828

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Item Number / Title [DODIC]: 1 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
5.1.10) NTDN/Classic Reach Systems(†)	-	-	0.000	481.000	4	1.924	500.000	4	2.000	508.477	4	2.034	-	-	0.000	508.477	4	2.034
5.1.11) SSEE Increment F (V)7/8 ECP Blade Kits(†) (5)	641.095	42	26.926	564.400	12	6.773	574.000	3	1.722	584.000	8	4.672	-	-	0.000	584.000	8	4.672
Subtotal: Recurring Cost	-	-	*81.040*	-	-	*32.709*	-	-	*18.482*	-	-	*22.362*	-	-	*0.000*	-	-	*22.362*
Subtotal: Hardware - 1U014 SSEE Increment F (All Variants) ECP Cost	**-**	**-**	***81.040***	**-**	**-**	***32.709***	**-**	**-**	***18.482***	**-**	**-**	***22.362***	**-**	**-**	***0.000***	**-**	**-**	***22.362***
Support - 1U555 Production Support Cost																		
6.1) SSEE Inc E and SSEE Inc E ECP Production Support	-	-	1.718	-	-	0.129	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.3) ICADS Production Support	-	-	0.153	-	-	0.259	-	-	0.000	-	-	1.058	-	-	0.000	-	-	1.058
6.4) SSEE Inc F (All Var) & SSEE Inc F (All Var) ECPs - Production Support	-	-	6.597	-	-	2.266	-	-	1.488	-	-	1.511	-	-	0.000	-	-	1.511
Subtotal: Support - 1U555 Production Support Cost	**-**	**-**	***8.468***	**-**	**-**	***2.654***	**-**	**-**	***1.488***	**-**	**-**	***2.569***	**-**	**-**	***0.000***	**-**	**-**	***2.569***
Support - 1U776 / 1U777 Installation Cost																		
7.1) Red Falcon DSA	-	-	0.310	-	-	0.220	-	-	0.100	-	-	0.000	-	-	0.000	-	-	0.000
7.2) Red Falcon Install	-	-	0.330	-	-	0.340	-	-	0.350	-	-	0.000	-	-	0.000	-	-	0.000
7.5) SSEE Modifications LBTF Paragon/Graywing Install - Shore	-	-	0.590	-	-	1.200	-	-	1.220	-	-	0.000	-	-	0.000	-	-	0.000
7.6) SSEE Increment F(V)1/2 Processing Upgrade Workstations - Install	-	-	0.000	-	-	0.120	-	-	0.178	-	-	0.000	-	-	0.000	-	-	0.000
7.7) SSEE Increment F(V)1/2 Intellian Antennas - Install (6)	-	-	0.000	-	-	0.000	-	-	5.695	-	-	2.100	-	-	0.000	-	-	2.100
7.8) SSEE Increment F(V)1/2 Intellian Antennas - DSA	-	-	0.000	-	-	1.365	-	-	1.547	-	-	1.412	-	-	0.000	-	-	1.412
7.9) SSEE Increment F(V)1/2 NTDN/Classic Reach Systems - Install	-	-	0.000	-	-	0.000	-	-	0.300	-	-	0.305	-	-	0.000	-	-	0.305

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Item Number / Title [DODIC]: 1 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
7.10) SSEE Increment F(V)1/2 NTDN/Classic Reach Systems - DSA	-	-	0.000	-	-	0.080	-	-	0.121	-	-	0.123	-	-	0.000	-	-	0.123
7.11) SSEE Increment F (V)7/8 ECP Blade Kits Install	-	-	2.286	-	-	0.734	-	-	0.896	-	-	0.228	-	-	0.000	-	-	0.228
7.12) SSEE Increment F (V)7/8 ECP Blade Kits DSA	-	-	3.302	-	-	0.788	-	-	0.410	-	-	0.461	-	-	0.000	-	-	0.461
Subtotal: Support - 1U776 / 1U777 Installation Cost	**-**	**-**	***6.818***	**-**	**-**	***4.847***	**-**	**-**	***10.817***	**-**	**-**	***4.629***	**-**	**-**	***0.000***	**-**	**-**	***4.629***
Support - Consolidated Prior Year Requirements Cost																		
8.1) SSEE ECP Consolidated Prior Year Requirements (7)	-	-	314.173	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Consolidated Prior Year Requirements Cost	**-**	**-**	***314.173***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**741.676**	**-**	**-**	**48.380**	**-**	**-**	**33.878**	**-**	**-**	**53.856**	**-**	**-**	**0.000**	**-**	**-**	**53.856**

(†) indicates the presence of a P-5a

Footnotes:

(1) Ships Signal Exploitation Equipment (SSEE) Increment E ECP prior year Procurements (includes Digital Receiver Technology, Medusa and XP Eradication); Qty 206.

(2) Integrated Communications and Data System (ICADS) FY21 unit cost increase reflects the cost of a full ICADS Increment II configuration, functionality and capability. FY19 unit cost funded changes to the existing system to address the unique configuration and limited requirements scope.

(3) ICADS Infrastructure Kit procurements include all cabling, hardware and mounting plate foundations for the associated system components required on deck and the below deck rack configuration. ICADS Infrastructure Kits will be permanently installed on unit level platforms.

(4) SSEE Increment F (V)1/2 ECP - Intellian Antenna previously known as Inmarsat Antennas

(5) 5.1.11) Procurement of Engineering Change Proposal (ECP) Blade Kits address IBM/Lenovo server replacement (IBM servers has been sold to Lenovo, a foreign owned company). These kits are able to support system Technical Refresh, Windows 10 operating system compliance and replace obsolete parts.

(6) The installation costs of the Intellian Antennas include costs to design and procure platform specific pedestals required for the installation of the antennas. The Intellian Antennas need to sit high enough on the platform so there is no interference from other shipboard antennas.

(7) SSEE ECP Consolidated Prior Year includes: SSEE Inc F (V)1/2 Shore (Qty 6), SSEE MODS- Shore - Land Based Test Facility (LBTF), CUB Replacement, LRIP to FRP Back fit Kits, Red Falcon Upgrade Kits, LBTF Refresh Kits, Blade Delta Kits, Windows 10 NRE, JIRA NRE, SSEE Inc F (V)7/8 Recorders , RFCU kits, DRT, Medusa,and XP Eradication.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Item Number / Title [DODIC]: 1 / Shipboard IW Exploit

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.2) Red Falcon Antennas		2019	NIWC PAC / San Diego	WR	San Diego, CA	Jan 2019	Aug 2019	10	82.000	Y		
3.1.1) Information Warfare (IW) Training Equipment		2019	NIWC PAC / San Diego, CA	WR	San Diego, CA	Nov 2018	Aug 2019	1	3,040.000	Y		
3.1.1) Information Warfare (IW) Training Equipment		2020	NIWC PAC / San Diego, CA	WR	San Diego, CA	Nov 2019	Aug 2020	1	3,091.000	Y		
3.1.1) Information Warfare (IW) Training Equipment		2021	NIWC PAC / San Diego, CA	WR	San Diego, CA	Nov 2020	Aug 2021	1	3,144.000	Y		
4.1.1) ICADS(†)		2019	NIWC LANT / Charleston, SC	WR	San Diego, CA	Jan 2019	Jan 2020	1	4,310.000	Y		
4.1.1) ICADS(†)		2021	TBD / TBD	C / TBD	TBD	Jan 2021	May 2022	3	5,288.000	Y		
4.1.2) ICADS Infrastructure(†)		2021	TBD / TBD	C / TBD	** NO PCO **	Jan 2021	Jan 2022	3	1,762.667	Y		
5.1.1) SSEE Increment F (V)1/2 In-line Blade Kits		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	5	689.000	Y		
5.1.1) SSEE Increment F (V)1/2 In-line Blade Kits		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	3	700.550	Y		
5.1.2) SSEE Increment F (V)1/2 ECP - Processing Upgrades Workstations		2019	NIWC LANT / Charleston, SC	WR	San Diego, CA	Jan 2019	Jan 2020	35	68.000	Y		
5.1.3) SSEE Increment F (V)1/2 ECP - Intellian Antenna		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	7	181.000	Y		
5.1.3) SSEE Increment F (V)1/2 ECP - Intellian Antenna		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	184.000	Y		
5.1.3) SSEE Increment F (V)1/2 ECP - Intellian Antenna		2021	TBD / TBD	TBD	TBD	Jan 2021	Jan 2022	5	187.206	Y		
5.1.4) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	22	192.000	Y		
5.1.4) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	195.300	Y		
5.1.4) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits		2021	TBD / TBD	TBD	TBD	Jan 2021	Jan 2022	8	198.600	Y		
5.1.5) SSEE Increment F(V)7/8 ECP IO Equipment Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	724.000	Y		
5.1.5) SSEE Increment F(V)7/8 ECP IO Equipment Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	736.300	Y		
5.1.5) SSEE Increment F(V)7/8 ECP IO Equipment Modules		2021	TBD / TBD	TBD	TBD	Jan 2021	Jan 2022	6	748.828	Y		
5.1.6) SSEE Increment F(V)7/8 SSC-W ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	560.700	Y		
5.1.6) SSEE Increment F(V)7/8 SSC-W ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	570.100	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Item Number / Title [DODIC]: 1 / Shipboard IW Exploit

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
5.1.6) SSEE Increment F(V)7/8 SSC-W ECP Modules		2021	TBD / TBD	TBD	TBD	Jan 2021	Jan 2022	6	579.807	Y		
5.1.7) SSEE Increment F(V)7/8 SSC-S ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	306.167	Y		
5.1.7) SSEE Increment F(V)7/8 SSC-S ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	311.300	Y		
5.1.7) SSEE Increment F(V)7/8 SSC-S ECP Modules		2021	TBD / TBD	TBD	TBD	Jan 2021	Jan 2022	6	316.647	Y		
5.1.8) SSEE Increment F(V)7/8 Red Falcon ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	230.667	Y		
5.1.8) SSEE Increment F(V)7/8 Red Falcon ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	234.500	Y		
5.1.8) SSEE Increment F(V)7/8 Red Falcon ECP Modules		2021	TBD / TBD	TBD	TBD	Jan 2021	Jan 2022	6	238.555	Y		
5.1.9) SSEE Increment F(V)7/8 Medusa ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Feb 2019	Feb 2020	6	294.500	Y		
5.1.9) SSEE Increment F(V)7/8 Medusa ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Feb 2020	Feb 2021	5	299.500	Y		
5.1.9) SSEE Increment F(V)7/8 Medusa ECP Modules		2021	TBD / TBD	TBD	TBD	Feb 2021	Feb 2022	6	304.623	Y		
5.1.10) NTDN/Classic Reach Systems		2019	TICOM / Austin, TX	C / CPFF	San Diego, CA	Jan 2019	Jan 2020	4	481.000	Y		
5.1.10) NTDN/Classic Reach Systems		2020	TICOM / Austin, TX	C / CPFF	San Diego, CA	Jan 2020	Jan 2021	4	500.000	Y		
5.1.10) NTDN/Classic Reach Systems		2021	TICOM / Austin, TX	C / CPFF	San Diego, CA	Jan 2021	Jan 2022	4	508.477	Y		
5.1.11) SSEE Increment F (V)7/8 ECP Blade Kits		2019	ARGON / Fairfax, VA	C / TBD	San Diego, CA	Oct 2018	Oct 2019	12	564.400	Y		
5.1.11) SSEE Increment F (V)7/8 ECP Blade Kits		2020	ARGON / Fairfax, VA	C / TBD	San Diego, CA	Oct 2019	Oct 2020	3	574.000	Y		
5.1.11) SSEE Increment F (V)7/8 ECP Blade Kits		2021	TBD / TBD	TBD	TBD	Oct 2021	Oct 2022	8	584.000	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Item Number / Title [DODIC]:** 1 / Shipboard IW Exploit

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
4.1.1) ICADS (2)																															
	1	2019	NAVY	1	0	1				A -	-	-	-	-	-	-	-	-	-	-	-	1									0
	2	2021	NAVY	3	0	3																									3
4.1.2) ICADS Infrastructure (3)																															
	3	2021	NAVY	3	0	3																									3
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Item Number / Title [DODIC]:** 1 / Shipboard IW Exploit

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
4.1.1) ICADS (2)																															
	1	2019	NAVY	1	1	0																									0
	2	2021	NAVY	3	0	3				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3					0
4.1.2) ICADS Infrastructure (3)																															
	3	2021	NAVY	3	0	3				A -	-	-	-	-	-	-	-	-	-	-	-	3									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Item Number / Title [DODIC]:** 1 / Shipboard IW Exploit

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NIWC LANT - Charleston, SC			TBD	0	3	12	15	0	3	12	15
2	TBD - TBD			TBD	0	3	16	19	0	3	16	19
3	TBD - TBD			TBD	0	3	12	15	0	3	12	15

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 1 / SSEE Increment F (All Variants)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	656.642	103.992	80.972	49.627	0.000	49.627	83.601	61.744	21.188	0.000	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	656.642	103.992	80.972	49.627	0.000	49.627	83.601	61.744	21.188	0.000	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**656.642**	**103.992**	**80.972**	**49.627**	**0.000**	**49.627**	**83.601**	**61.744**	**21.188**	**0.000**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Ship Signal Exploitation Equipment (SSEE) Increment F (All Variants) Program will provide Carrier Strike Groups with Information Operation (IO) / non-kinetic capabilities and the subsequent ability to exploit Signals Of Interest (SOI) by providing a state-of-the-art system which detects, acquires, and collects data on any potential threat.

Unit Price Cost (UPC) for SSEE Family of Systems changes from year to year based on contracted quantity discounts received from the vendor. They are updated each year to account for current procurement plans.

SSEE OPN procurements may be awarded with SSEE New Construction (SCN), Foreign Military Sales (FMS), and U.S. Coast Guard system procurements of same types to achieve the best value for the government.

[SSEE Increment F(V)1/2 Systems (Ship)] The Ship Signal Exploitation Equipment (SSEE) Inc F (All Variants) Program will provide Carrier Strike Groups with Information Operation (IO) / non-kinetic capabilities and the subsequent ability to exploit Signals Of Interest (SOI) by providing a state-of-the-art system which detects, acquires, and collects data on any potential threat.

[SSEE Increment F(V)7/8 Ship - Below Deck and Core] SSEE Increment F(V)7/8 Ship - Below Deck and Core is a scalable, modular variant of SSEE Increment F enabling configuration to meet platform mission requirements. SSEE Increment F(V)7/8 leverages SSEE Increment F common software, training, and logistics. SSEE Increment F(V)7/8 consists of infrastructure (Topside Antennas) and a Below Deck Core system which includes Mission Tailorable modular components to increase capabilities.

[SSEE Increment F(V)7/8 Ship - Infrastructure] SSEE Increment F(V)7/8 Ship - Infrastructure is a scalable, modular variant of SSEE Increment F enabling configuration to meet platform mission requirements. SSEE Increment F(V)7/8 leverages SSEE Increment F common software, training, and logistics. SSEE Increment F(V)7/8 consists of infrastructure (Topside Antennas) and a Below Deck Core system which includes Mission Tailorable modular components to increase capabilities. The modularity and scalability of SSEE Increment F(V)7/8 is delivered using Engineering Change Proposal (ECP).

[SSEE Increment F(V)7/8 Shore - Below Deck and Core] SSEE Increment F(V)7/8 Shore - Below Deck and Core is a scalable, modular variant of SSEE Increment F installed at Land Based Test Facilities (LBTFs). It facilitates testing of new software builds, Engineering Change Proposals (ECPs), and Spectral capability drops. It's also installed at training sites to increase throughput for operator and maintainer training. SSEE Increment F(V)7/8 consists of infrastructure (Topside Antennas) and a Below Deck Core system which includes Mission Tailorable modular components to increase capabilities.

[SSEE Increment F(V)7/8 Shore - Infrastructure] SSEE Increment F(V)7/8 Shore - Infrastructure is a scalable, modular variant of SSEE Increment F installed at Land Based Test Facilities (LBTFs). It facilitates testing of new software builds, Engineering Change Proposals (ECPs), and Spectral capability drops. It's also installed at training sites to increase throughput for operator and maintainer training. SSEE Increment F(V)7/8 consists of infrastructure (Topside Antennas) and a Below Deck Core system which includes Mission Tailorable modular components to increase capabilities.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 1 / SSEE Increment F (All Variants)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:** 0304785N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SSEE Increment F (All Variants)												
B Kits												
Recurring												
1.1.1) SSEE Increment F(V)1/2 Systems (Ship) - NonOrganic [8]	53 / 417.312	5 / 42.015	3 / 26.382	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	61 / 485.709
1.1.2) SSEE Increment F(V)7/8 Ship - Below Deck and Core - Organic [9]	12 / 39.984	7 / 27.892	2 / 8.098	6 / 24.706	- / -	6 / 24.706	7 / 29.313	7 / 29.812	- / -	- / -	- / -	41 / 159.805
1.1.3) SSEE Increment F(V)7/8 Ship - Infrastructure - NonOrganic	12 / 9.067	7 / 3.982	2 / 1.957	6 / 5.971	- / -	6 / 5.971	7 / 7.085	7 / 7.205	- / -	- / -	- / -	41 / 35.267
1.1.4) SSEE Increment F(V)7/8 Shore - Below Deck and Core - Organic [10]	8 / 18.357	1 / 3.984	2 / 8.098	- / -	- / -	- / -	2 / 8.376	- / -	- / -	- / -	- / -	13 / 38.815
1.1.5) SSEE Increment F(V)7/8 Shore - Infrastructure - NonOrganic	8 / 16.167	1 / 0.569	2 / 1.957	- / -	- / -	- / -	2 / 2.024	- / -	- / -	- / -	- / -	13 / 20.717
Subtotal: Recurring	*- / 500.887*	*- / 78.442*	*- / 46.492*	*- / 30.677*	*- / -*	*- / 30.677*	*- / 46.798*	*- / 37.017*	*- / -*	*- / -*	*- / 0.000*	*- / 740.313*
Subtotal: SSEE Increment F (All Variants)	*93 / 500.887*	*21 / 78.442*	*11 / 46.492*	*12 / 30.677*	*- / -*	*12 / 30.677*	*18 / 46.798*	*14 / 37.017*	*- / -*	*- / -*	*- / -*	*169 / 740.313*
Subtotal: Procurement, All Modification Items	*- / 500.887*	*- / 78.442*	*- / 46.492*	*- / 30.677*	*- / -*	*- / 30.677*	*- / 46.798*	*- / 37.017*	*- / -*	*- / -*	*- / 0.000*	*- / 740.313*
Support *(All Modification Items)*												
2.1) Production Support	- / 30.378	- / 3.001	- / 2.347	- / 2.293	- / 0.000	- / 2.293	- / 3.115	- / 2.170	- / 1.972	- / 0.000	Continuing	Continuing
2.2) DSA	- / 25.412	- / 4.232	- / 4.603	- / 4.573	- / 0.000	- / 4.573	- / 5.142	- / 3.934	- / 1.216	- / 0.000	Continuing	Continuing
Subtotal: Support	*- / 55.790*	*- / 7.233*	*- / 6.950*	*- / 6.866*	*- / -*	*- / 6.866*	*- / 8.257*	*- / 6.104*	*- / 3.188*	*- / -*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SSEE Increment F (All Variants)	- / 99.965	- / 18.317	- / 27.530	- / 12.084	- / 0.000	- / 12.084	- / 28.546	- / 18.623	- / 18.000	- / 0.000	- / 0.000	- / 223.065
Subtotal: Installation	*- / 99.965*	*- / 18.317*	*- / 27.530*	*- / 12.084*	*- / -*	*- / 12.084*	*- / 28.546*	*- / 18.623*	*- / 18.000*	*- / -*	*- / 0.000*	*- / 223.065*
Total												
Total Cost (Procurement + Support + Installation)	**656.642**	**103.992**	**80.972**	**49.627**	**0.000**	**49.627**	**83.601**	**61.744**	**21.188**	**0.000**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 1 / SSEE Increment F (All Variants)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Increment F (All Variants)

Manufacturer Information

Manufacturer Name: ARGON - SSEE INC F (V)1/2	Manufacturer Location: Fairfax, VA
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 16

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Apr 2019	Apr 2020					
Delivery Dates	Aug 2020	Aug 2021					

Manufacturer Name: ARGON - SSEE INC F (V)7/8 Ship & Shore Infrastructure and Below Deck & Core	Manufacturer Location: Fairfax, VA
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020					
Delivery Dates	Jan 2020	Jan 2021					

Manufacturer Name: TBD - SSEE INC F (V)7/8 Ship & Shore Infrastructure and Below Deck & Core (11)	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates			Jul 2022	Apr 2023	Apr 2024	Apr 2025	Apr 2026

Installation Information

Method of Implementation: Ship:: Installation Name: SSEE Increment F(V)1/2 Systems (Ship)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	44 / 91.663	4 / 8.416	5 / 10.698	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	53 / 110.777
FY 2019	- / -	- / -	- / -	1 / 2.176	0 / 0.000	1 / 2.176	4 / 8.852	- / -	- / -	- / -	0 / 0.000	5 / 11.028
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.639	- / -	- / -	- / -	0 / 0.000	3 / 6.639
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	44 / 91.663	4 / 8.416	5 / 10.698	1 / 2.176	0 / 0.000	1 / 2.176	7 / 15.491	- / -	- / -	- / -	0 / 0.000	61 / 128.444

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 1 / SSEE Increment F (All Variants)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Increment F (All Variants)

Installation Information

Method of Implementation: Ship:: Installation Name: SSEE Increment F(V)1/2 Systems (Ship)

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	44	-	-	1	3	3	2	-	-	1	-	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
Out	41	3	-	-	1	3	3	2	-	-	1	-	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61

Method of Implementation: IMO:: Installation Name: SSEE INC F (V) 7/8 Ship Infrastructure

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	3 / 7.002	4 / 8.274	5 / 10.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 25.796
FY 2019	- / -	- / -	3 / 6.312	4 / 8.558	0 / 0.000	4 / 8.558	- / -	- / -	- / -	- / -	0 / 0.000	7 / 14.870
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	2 / 4.352	- / -	- / -	- / -	0 / 0.000	2 / 4.352
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	4 / 8.703	2 / 4.426	- / -	- / -	0 / 0.000	6 / 13.129
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 13.277	1 / 2.250	- / -	0 / 0.000	7 / 15.527
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 15.750	- / -	0 / 0.000	7 / 15.750
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 7.002	4 / 8.274	8 / 16.832	4 / 8.558	0 / 0.000	4 / 8.558	6 / 13.055	8 / 17.703	8 / 18.000	- / -	0 / 0.000	41 / 89.424

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	3	-	1	2	1	1	3	2	2	1	-	-	3	-	2	-	4	-	2	3	3	1	-	4	3	-	-	-	-	-	41
Out	1	2	-	1	2	1	1	3	2	2	1	-	-	3	-	2	-	4	-	2	3	3	1	-	4	3	-	-	-	-	41

Method of Implementation: IMO:: Installation Name: SSEE INC F (V) 7/8 Shore Infrastructure

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	4 / 1.300	4 / 1.627	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 2.927

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 1 / SSEE Increment F (All Variants)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Increment F (All Variants)

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE INC F (V) 7/8 Shore Infrastructure

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	- / -	1 / 0.450	0 / 0.000	1 / 0.450	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.450
FY 2020	- / -	- / -	- / -	2 / 0.900	0 / 0.000	2 / 0.900	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.900
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.920	- / -	- / -	0 / 0.000	2 / 0.920
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	4 / 1.300	4 / 1.627	- / -	3 / 1.350	0 / 0.000	3 / 1.350	- / -	2 / 0.920	- / -	- / -	0 / 0.000	13 / 5.197

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	4	4	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	13
Out	4	-	4	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	13

Method of Implementation (Organic): SSEE Increment F(V)7/8 Ship - Below Deck and Core - Not Installed | **Installation Quantity:** 41

Method of Implementation (Organic): SSEE Increment F(V)7/8 Shore - Below Deck and Core - Not Installed | **Installation Quantity:** 13

Footnotes:

(8) SSEE Increment F (V) 1/2 FY20 marks the final ordering year of the classified production contract for SSEE Increment F (V)1/2 procurements; no follow on contract is planned due to planned Spectral production beginning in FY23. To ensure both the lowest risk to delivery schedules and unit cost, FY20 procurements include the last three (3) SSEE Increment F (V)1/2 OPN and SCN systems required for fielding in FY22. Due to current ship avails, four (4) FY19 systems will not be installed afloat until FY22.

(9) SSEE Increment F(V)7/8 Ship FY19 quantities - Due to ship availability, one FY19 unit was moved from ship to shore.

(10) SSEE Increment F(V)7/8 Shore - Below Deck and Core FY19 quantities - Due to ship availability, one FY19 unit was moved from ship to shore.

(11) SSEE INC F (V)7/8 FY21 new contract has an 18-month production lead time due to the establishment of a new production line. FY22 and out have a 15-month production lead time.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 2 / SSEE Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	95.799	60.951	67.674	66.343	0.000	66.343	81.841	78.799	25.603	0.768	0.000	477.778
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	95.799	60.951	67.674	66.343	0.000	66.343	81.841	78.799	25.603	0.768	0.000	477.778
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**95.799**	**60.951**	**67.674**	**66.343**	**0.000**	**66.343**	**81.841**	**78.799**	**25.603**	**0.768**	**0.000**	**477.778**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship Signal Exploitation Equipment (SSEE) Modifications is a classified Navy tactical signals intelligence frequency extension capability that integrates and interoperates with SSEE systems. This capability is broken into two major components, Paragon which provides simultaneous detection, collection, processing, Information Operations (IO) and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered with SSEE Increment F and its variants, and the Graywing subsystem which is an advanced Electronic Warfare system that integrates with SSEE Increment F systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board Information Operation (IO) Countermeasure Red Flash" (details held at a higher classification level).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 2 / SSEE Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Various	**Modification Type:** Upgrade	**Related RDT&E PEs:** 0304785N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SSEE Modifications												
B Kits												
Recurring												
1.1.1) SSEE Modifications (SSEE MODS) - NonOrganic (12)	15 / 77.142	9 / 50.570	7 / 41.272	8 / 47.970	- / -	8 / 47.970	10 / 60.982	7 / 43.413	- / -	- / -	- / -	56 / 321.349
Subtotal: Recurring	*- / 77.142*	*- / 50.570*	*- / 41.272*	*- / 47.970*	*- / -*	*- / 47.970*	*- / 60.982*	*- / 43.413*	*- / -*	*- / -*	*- / 0.000*	*- / 321.349*
Subtotal: SSEE Modifications	*15 / 77.142*	*9 / 50.570*	*7 / 41.272*	*8 / 47.970*	*- / -*	*8 / 47.970*	*10 / 60.982*	*7 / 43.413*	*- / -*	*- / -*	*- / -*	*56 / 321.349*
Subtotal: Procurement, All Modification Items	*- / 77.142*	*- / 50.570*	*- / 41.272*	*- / 47.970*	*- / -*	*- / 47.970*	*- / 60.982*	*- / 43.413*	*- / -*	*- / -*	*- / 0.000*	*- / 321.349*
Support *(All Modification Items)*												
2.1) SSEE MODS Production Support	- / 9.488	- / 3.034	- / 2.353	- / 2.878	- / -	- / 2.878	- / 3.108	- / 2.605	- / 1.700	- / 0.768	- / -	- / 25.934
2.2) SSEE MODS DSA	- / 2.907	- / 2.550	- / 2.772	- / 2.091	- / -	- / 2.091	- / 2.867	- / 2.821	- / 0.861	- / -	- / -	- / 16.869
Subtotal: Support	*- / 12.395*	*- / 5.584*	*- / 5.125*	*- / 4.969*	*- / -*	*- / 4.969*	*- / 5.975*	*- / 5.426*	*- / 2.561*	*- / 0.768*	*- / 0.000*	*- / 42.803*
Installation												
Modification Item 1 of 1: SSEE Modifications	- / 6.262	- / 4.797	- / 21.277	- / 13.404	- / 0.000	- / 13.404	- / 14.884	- / 29.960	- / 23.042	- / 0.000	- / 0.000	- / 113.626
Subtotal: Installation	*- / 6.262*	*- / 4.797*	*- / 21.277*	*- / 13.404*	*- / -*	*- / 13.404*	*- / 14.884*	*- / 29.960*	*- / 23.042*	*- / -*	*- / 0.000*	*- / 113.626*
Total												
Total Cost (Procurement + Support + Installation)	**95.799**	**60.951**	**67.674**	**66.343**	**0.000**	**66.343**	**81.841**	**78.799**	**25.603**	**0.768**	**0.000**	**477.778**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 2 / SSEE Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Modifications

Manufacturer Information

Manufacturer Name: ARGON - SSEE Mods - Ship	Manufacturer Location: Fairfax, VA
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 15

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020					
Delivery Dates	Apr 2020	Apr 2021					

Manufacturer Name: TBD - SSEE Mods - Ship (13)	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jan 2021	Jan 2022	Jan 2023		
Delivery Dates			Jul 2022	Apr 2023	Apr 2024		

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE Mods

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	5 / 6.262	3 / 4.797	7 / 11.457	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	15 / 22.516
FY 2019	- / -	- / -	6 / 9.820	3 / 8.042	0 / 0.000	3 / 8.042	- / -	- / -	- / -	- / -	0 / 0.000	9 / 17.862
FY 2020	- / -	- / -	- / -	2 / 5.362	0 / 0.000	2 / 5.362	5 / 8.270	- / -	- / -	- / -	0 / 0.000	7 / 13.632
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	4 / 6.614	4 / 10.894	- / -	- / -	0 / 0.000	8 / 17.508
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 19.066	3 / 6.913	- / -	0 / 0.000	10 / 25.979
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 16.129	- / -	0 / 0.000	7 / 16.129
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 6.262	3 / 4.797	13 / 21.277	5 / 13.404	0 / 0.000	5 / 13.404	9 / 14.884	11 / 29.960	10 / 23.042	- / -	0 / 0.000	56 / 113.626

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 2 / SSEE Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Modifications

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE Mods

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	5	3	-	-	-	2	3	5	3	3	-	-	2	1	2	2	4	2	2	3	4	3	-	4	3	-	-	-	-	-	56
Out	5	-	3	-	-	-	2	3	5	3	3	-	-	2	1	2	2	4	2	2	3	4	3	-	4	3	-	-	-	-	56

Footnotes:

(12) FY21 Installation Cost increases for modifications of two DDG FLT I Ship's Signal Exploitation Space (SSES) to accommodate the added size, weight, and power (SWaP) requirements needed to install the system.

(13) SSEE Modifications FY21 new contract has an 18-month production lead time due to the establishment of a new production line. FY22 and out have a 15-month production lead time.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 3 / SSEE Inc F ECPs
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	4.780	5.962	43.992	0.000	43.992	44.887	33.202	27.228	43.743	4.143	207.937
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	4.780	5.962	43.992	0.000	43.992	44.887	33.202	27.228	43.743	4.143	207.937
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**4.780**	**5.962**	**43.992**	**0.000**	**43.992**	**44.887**	**33.202**	**27.228**	**43.743**	**4.143**	**207.937**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Beginning in FY21, Next Generation Chassis cost element in the P-5 exhibit moved to a P-3a exhibit due to the increased number of systems being procured, and their associated cost.

Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) Increment F program (All Variants) as well as incorporates Pre-Planned Product Improvement (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO) capabilities into the host systems. ECP's maintain and improve upon existing capability and relevance within a rapidly evolving threat environment.
- ECP equipment will also be used to supplement SSEE Family of Systems (FoS) to meet their respective scalable and modular capacities and meet platform mission requirements including Anti-Access Area Denial (A2AD), unique signal processing capability or exploitation functionality.
- ECP equipment will be used to enable SSEE Increment F(V)7/8 (previously referred to as Tactical Cryptologic System(TCS)) to meet its scalable and modular capacity. Currently this funds Blade Replacement Kits to address IBM/Lenovo server replacement (IBM servers have been sold to Lenovo, a foreign owned company).

[SSEE Increment F (V)1/2 & (V)7/8 - Next Generation Chassis] Next Generation Chassis modifications provide enhanced data processing and greater exposure to existing system services while creating a secondary physical hosting environment to meet constricting size, weight, power, and cooling requirements.

[SSEE Increment F(V)7/8 Spectral Capability Drops] Spectral Capability Drops include high maturity, developed Radio Frequency (RF) signal acquisition collection or exploitation capability or technique supporting host system functionality to maximize Fleet cryptologic resources. Based on prioritized Fleet need, Spectral Capability Drops deliver matured, validated, and available capability leveraging the expanded Spectral requirements base. The Fleet benefits by being able to incorporate and use these capabilities through SSEE Increment F / SSEE Mods as opposed to waiting until full Spectral Engineering Development Model (EDM) is complete. These items specifically are Combat Systems integration solutions, cyber capabilities, antenna solutions covering expanded frequency ranges and targets as well as specialized signal processing and acquisition techniques.

[SSEE Increment F (V)1/2 - A2AD KIT] Anti-Access Area Denial (A2AD) kits are a varied mix of software and hardware components delivering unique signal processing capabilities or exploitation functionality designed to address classified Fleet Integrated Priority Capabilities needs and integrate seamlessly into the host systems to give maritime Fleet Commanders a tactical global advantage.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 3 / SSEE Inc F ECPs
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:** 0304785N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SSEE Inc F ECPs												
B Kits												
Recurring												
1.1.1) SSEE Increment F (V)1/2 & (V)7/8 - Next Generation Chassis - NonOrganic (14)	- / -	10 / 4.780	10 / 4.861	27 / 13.349	- / -	27 / 13.349	28 / 14.106	17 / 8.693	9 / 4.680	9 / 4.760	- / -	110 / 55.229
1.1.2) SSEE Increment F(V)7/8 Spectral Capability Drops - NonOrganic (15)	- / -	- / -	- / -	9 / 16.200	- / -	9 / 16.200	6 / 10.984	6 / 11.170	7 / 13.254	15 / 28.883	- / -	43 / 80.491
1.1.3) SSEE Increment F (V)1/2 - A2AD KIT - NonOrganic (16)	- / -	- / -	- / -	30 / 9.309	- / -	30 / 9.309	29 / 9.151	13 / 4.159	9 / 2.928	11 / 3.640	- / -	92 / 29.187
Subtotal: Recurring	*- / 0.000*	*- / 4.780*	*- / 4.861*	*- / 38.858*	*- / -*	*- / 38.858*	*- / 34.241*	*- / 24.022*	*- / 20.862*	*- / 37.283*	*- / 0.000*	*- / 164.907*
Subtotal: SSEE Inc F ECPs	*- / -*	*10 / 4.780*	*10 / 4.861*	*66 / 38.858*	*- / -*	*66 / 38.858*	*63 / 34.241*	*36 / 24.022*	*25 / 20.862*	*35 / 37.283*	*- / -*	*245 / 164.907*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 4.780*	*- / 4.861*	*- / 38.858*	*- / -*	*- / 38.858*	*- / 34.241*	*- / 24.022*	*- / 20.862*	*- / 37.283*	*- / 0.000*	*- / 164.907*
Support *(All Modification Items)*												
2.1) Inc F ECP Production Support	- / -	- / -	- / -	- / 2.331	- / -	- / 2.331	- / 1.854	- / 1.441	- / 1.252	- / 1.556	- / -	- / 8.434
2.2) Inc F ECP DSA	- / -	- / -	- / 0.201	- / 1.888	- / -	- / 1.888	- / 2.517	- / 1.816	- / 1.454	- / 2.135	- / -	- / 10.011
Subtotal: Support	*- / 0.000*	*- / -*	*- / 0.201*	*- / 4.219*	*- / -*	*- / 4.219*	*- / 4.371*	*- / 3.257*	*- / 2.706*	*- / 3.691*	*- / 0.000*	*- / 18.445*
Installation												
Modification Item 1 of 1: SSEE Inc F ECPs	- / 0.000	- / 0.000	- / 0.900	- / 0.915	- / 0.000	- / 0.915	- / 6.275	- / 5.923	- / 3.660	- / 2.769	- / 4.143	- / 24.585
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 0.900*	*- / 0.915*	*- / -*	*- / 0.915*	*- / 6.275*	*- / 5.923*	*- / 3.660*	*- / 2.769*	*- / 4.143*	*- / 24.585*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**4.780**	**5.962**	**43.992**	**0.000**	**43.992**	**44.887**	**33.202**	**27.228**	**43.743**	**4.143**	**207.937**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 3 / SSEE Inc F ECPs
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Inc F ECPs

Manufacturer Information

Manufacturer Name: NSMA TBD - Next Generation Chassis	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jan 2021				
Delivery Dates			Jan 2022				

Manufacturer Name: NSMA TBD - Spectral Capability Drop	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jan 2021				
Delivery Dates			Jan 2022				

Manufacturer Name: NSMA TBD - A2AD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jan 2021				
Delivery Dates			Jan 2022				

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE INC F Next Generation Chassis

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	10 / 0.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 0.900
FY 2020	- / -	- / -	- / -	10 / 0.915	0 / 0.000	10 / 0.915	- / -	- / -	- / -	- / -	0 / 0.000	10 / 0.915
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	27 / 2.513	- / -	- / -	- / -	0 / 0.000	27 / 2.513
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	28 / 2.651	- / -	- / -	0 / 0.000	28 / 2.651
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 1.637	- / -	0 / 0.000	17 / 1.637
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.881	0 / 0.000	9 / 0.881
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.896	9 / 0.896
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	10 / 0.900	10 / 0.915	0 / 0.000	10 / 0.915	27 / 2.513	28 / 2.651	17 / 1.637	9 / 0.881	9 / 0.896	110 / 10.393

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 3 / SSEE Inc F ECPs
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Inc F ECPs

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE INC F Next Generation Chassis

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	5	5	-	-	5	5	-	-	9	9	9	-	9	9	10	-	5	6	6	-	3	3	3	9	110
Out	-	-	-	-	-	-	5	5	-	-	5	5	-	-	9	9	9	-	9	9	10	-	5	6	6	-	3	3	3	9	110

Method of Implementation: IMO:: Installation Name: SSEE INC F Spectral Capability Drops

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.395	- / -	- / -	- / -	0 / 0.000	9 / 1.395
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.945	- / -	- / -	0 / 0.000	6 / 0.945
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.962	- / -	0 / 0.000	6 / 0.962
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.141	0 / 0.000	7 / 1.141
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 2.487	15 / 2.487
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.395	6 / 0.945	6 / 0.962	7 / 1.141	15 / 2.487	43 / 6.930

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	-	2	2	2	-	2	2	2	-	3	2	2	15	43
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	-	2	2	2	-	2	2	2	-	3	2	2	15	43

Method of Implementation: IMO:: Installation Name: SSEE INC F A2AD

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 3 / SSEE Inc F ECPs
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SSEE Inc F ECPs

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE INC F A2AD

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	30 / 2.367	- / -	- / -	- / -	0 / 0.000	30 / 2.367
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	29 / 2.327	- / -	- / -	0 / 0.000	29 / 2.327
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 1.061	- / -	0 / 0.000	13 / 1.061
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.747	0 / 0.000	9 / 0.747
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 0.760	11 / 0.760
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	30 / 2.367	29 / 2.327	13 / 1.061	9 / 0.747	11 / 0.760	92 / 7.262

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	-	10	10	9	-	5	5	3	-	3	3	3	11	92
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	-	10	10	9	-	5	5	3	-	3	3	3	11	92

Footnotes:

(14) Next Generation Chassis Engineering Change was realigned to a P-3a exhibit from the P5 exhibit. Next Generation Chassis FY21 quantity increases from 10 to 27 to support additional afloat platforms. Prior year units were primarily procured for existing Ships Signal Exploitation Equipment (SSEE) Increment F systems ashore.

(15) FY21 is the first year to procure Spectral Capability Drops for fielded SSEE Increment F / SSEE Mods systems. Spectral Capability Drops deliver fleet prioritized, matured, validated, and available capability developed for the Spectral Engineering Development Model (EDM).

(16) FY21 is the first year to procure A2AD kits for fielded SSEE Increment F (All variants) associated with the completion of A2AD research and developmental efforts.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 4 / Mods ECP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	21.926	0.000	21.926	20.839	12.804	5.456	3.785	0.800	65.610
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	21.926	0.000	21.926	20.839	12.804	5.456	3.785	0.800	65.610
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**21.926**	**0.000**	**21.926**	**20.839**	**12.804**	**5.456**	**3.785**	**0.800**	**65.610**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship Signal Exploitation Equipment Modification (SSEE Mods)Engineering Change Proposal (ECP) Next Generation Graywing below-deck embedded signal processing and analysis adds advanced capabilities and system enhancements to Graywing. This includes a combination of hardware and software components added to the system baseline to meet operational system requirements. Next Generation Graywing consists of multiple modifications and upgrades (topside and below deck) to pace specific classified Radio Frequency (RF) target sets (details held at higher classification). These threats have evolved and to ensure maximum performance against the newer target sets requires advanced RF input and processing, as well as modernized front-end and update to open system software architecture to ensure acquisition and exploitation Key Performance Parameters (KPPs) can still be met. The end-state ECP is intended to be fielded on multiple SSEE Modifications platforms.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 4 / Mods ECP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Mods ECP												
B Kits												
Recurring												
1.1.1) Graywing Nextgen - Ship - NonOrganic (17)	- / -	- / -	- / -	16 / 18.768	- / -	16 / 18.768	10 / 11.929	6 / 7.279	2 / 2.468	2 / 2.510	- / -	36 / 42.954
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 18.768*	*- / -*	*- / 18.768*	*- / 11.929*	*- / 7.279*	*- / 2.468*	*- / 2.510*	*- / 0.000*	*- / 42.954*
Subtotal: Mods ECP	*- / -*	*- / -*	*- / -*	*16 / 18.768*	*- / -*	*16 / 18.768*	*10 / 11.929*	*6 / 7.279*	*2 / 2.468*	*2 / 2.510*	*- / -*	*36 / 42.954*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / 18.768*	*- / -*	*- / 18.768*	*- / 11.929*	*- / 7.279*	*- / 2.468*	*- / 2.510*	*- / 0.000*	*- / 42.954*
Support *(All Modification Items)*												
2.1) Production Support	- / -	- / -	- / -	- / 1.126	- / -	- / 1.126	- / 0.716	- / 0.437	- / 0.148	- / 0.151	- / -	- / 2.578
2.2) DSA	- / -	- / -	- / -	- / 2.032	- / -	- / 2.032	- / 1.794	- / 1.088	- / 0.440	- / 0.324	- / -	- / 5.678
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / 3.158*	*- / -*	*- / 3.158*	*- / 2.510*	*- / 1.525*	*- / 0.588*	*- / 0.475*	*- / 0.000*	*- / 8.256*
Installation												
Modification Item 1 of 1: Mods ECP	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.400	- / 4.000	- / 2.400	- / 0.800	- / 0.800	- / 14.400
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 6.400*	*- / 4.000*	*- / 2.400*	*- / 0.800*	*- / 0.800*	*- / 14.400*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**21.926**	**0.000**	**21.926**	**20.839**	**12.804**	**5.456**	**3.785**	**0.800**	**65.610**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2360 / Shipboard IW Exploit	**Modification Number / Title:** 4 / Mods ECP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Mods ECP

Manufacturer Information

Manufacturer Name: TBD - Graywing Ship	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Jan 2021				
Delivery Dates			Jan 2022				

Installation Information

Method of Implementation: IMO:: Installation Name: Graywing Nextgen - Ship

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	16 / 6.400	- / -	- / -	- / -	0 / 0.000	16 / 6.400
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 4.000	- / -	- / -	0 / 0.000	10 / 4.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.400	- / -	0 / 0.000	6 / 2.400
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.800	0 / 0.000	2 / 0.800
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.800	2 / 0.800
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	16 / 6.400	10 / 4.000	6 / 2.400	2 / 0.800	2 / 0.800	36 / 14.400

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	5	-	3	3	4	-	2	2	2	-	2	-	-	2	36
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	5	-	3	3	4	-	2	2	2	-	2	-	-	2	36

Footnotes:

(17) FY21 is the first year to procure Graywing Next Generation units associated with the completion of research and development efforts.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2361 / Automatic Identification System (AIS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	10.014	4.000	5.368	3.862	0.000	3.862	3.831	2.761	2.662	2.714	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	10.014	4.000	5.368	3.862	0.000	3.862	3.831	2.761	2.662	2.714	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**10.014**	**4.000**	**5.368**	**3.862**	**0.000**	**3.862**	**3.831**	**2.761**	**2.662**	**2.714**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.005	0.033	0.037	-	0.037	0.035	0.020	0.019	0.018	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

1U030: Automatic Identification System (AIS) is required for safety of navigation for all surface ships and submarines. AIS is a maritime Very High Frequency (VHF) communication system, which allows ships to exchange navigation, ship identification, and cargo information machine-to-machine via VHF transponders. AIS provides vessels with the ability to rapidly identify and track commercial shipping, which significantly increases the Navy's ability to distinguish between normal and suspicious merchant ships headed towards United States and allied ports around the globe. AIS provides critical track data to the Common Operational Picture (COP) on surface ships, AN/BYG-1 Combat System on submarines, Global Command and Control System-Maritime (GCCS-M) on Force level ships, and Global Command and Control System-Joint (GCCS-J) at Fleet Maritime Operations Centers (MOC) for publishing AIS data to the Maritime Domain Awareness (MDA) Data Sharing Community of Interest. The AIS submarine configuration provides an interface to the AN/BYG-1 Combat System and encrypted AIS capability that is currently not available on other AIS variants. This capability dramatically improves the Combatant Commanders' situational awareness and MDA data sharing capabilities in support of regional engagement, and tracking efforts against potential maritime terrorism threats.

Funds will procure and install AIS systems for Navy ships, submarines and shore sites consisting of a combination of modified Commercial Off-The-Shelf (COTS) and government/commercial software, such as omni-directional Very High Frequency (VHF), Global Positioning System antennas, AIS transponders, displays and associated cables, servers, power supplies, laptop computers, junction boxes, switches and radio frequency couplers. Without this configuration of AIS, Navy submarines will not be able to see encrypted AIS track data and will increase the risk of collisions.

The Navy increased the AIS program procurements on Nuclear Command, Control, and Communications (NC3) mission capable Ohio class Ship, Submersible, Ballistic, Nuclear (SSBN) submarines. The need for AIS system is especially important for SSBN submarines, which have limited maneuverability during strategic patrol. The AIS Submarine configuration provides situational awareness (to include encrypted AIS message traffic from United States Coast Guard vessels) during time constrained ascents to communications depth, thereby significantly reducing the risk of a close-aboard contact situation, impacting the already limited resource of these SSBN submarines.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	**P-1 Line Item Number / Title:** 2361 / Automatic Identification System (AIS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	1U030 Automatic Identification System (AIS)	P-5a			- / 10.014	- / 4.000	- / 5.368	- / 3.862	- / -	- / 3.862
P-40	**Total Gross/Weapon System Cost**				**- / 10.014**	**- / 4.000**	**- / 5.368**	**- / 3.862**	**- / 0.000**	**- / 3.862**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY21 funding request was reduced by $0.338 million to account for the availability of prior year execution balances.

FY21 funds will support the procurement of (5) AIS submarine systems and (21) Cyber Hardening Kits and associated design services allocation; integration testing to support AIS installations on SSBN class submarines and installation funding for four (4) submarines. Additionally, the funding supports the installation of (40) cyber security kits.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2361 / Automatic Identification System (AIS)	**Aggregated Items Title:** 1U030 Automatic Identification System (AIS)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) 1U030 Automatic Identification Systems (AIS)																				
1.1) AIS - Procurement (1)(†)	A		66.706	17	1.134	90.000	6	0.540	92.000	4	0.368	94.000	5	0.470	-	-	-	94.000	5	0.470
1.2) Engineering Change Proposal	A		-	-	0.451	-	-	0.551	-	-	-	-	-	-	-	-	-	-	-	-
1.3) Cyber Security Hardware - Procurement (2)(†)	A		-	-	-	21.000	65	1.365	22.000	40	0.880	24.000	21	0.504	-	-	-	24.000	21	0.504
1.4) Transponders	A		8.500	200	1.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) Combat Workstation - Procurement	A		2.600	400	1.040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) 1U030 Automatic Identification Systems (AIS)			**-**	**-**	***4.325***	**-**	**-**	***2.456***	**-**	**-**	***1.248***	**-**	**-**	***0.974***	**-**	**-**	**-**	**-**	**-**	***0.974***
2) Installations																				
2.1) AIS - Installation (3)	A		-	-	2.953	-	-	0.203	-	-	1.015	-	-	0.774	-	-	-	-	-	0.774
2.2) Cyber Security Hardware - Installation (4)	A		-	-	-	-	-	-	-	-	2.717	-	-	1.680	-	-	-	-	-	1.680
Subtotal: 2) Installations			**-**	**-**	***2.953***	**-**	**-**	***0.203***	**-**	**-**	***3.732***	**-**	**-**	***2.454***	**-**	**-**	**-**	**-**	**-**	***2.454***
3) Support																				
3.1) Production Support	A		-	-	0.876	-	-	0.146	-	-	0.132	-	-	0.134	-	-	-	-	-	0.134
3.2) AIS - DSA (5)	A		-	-	0.780	-	-	0.144	-	-	0.096	-	-	0.125	-	-	-	-	-	0.125
3.3) Cyber Security Hardware - DSA (6)	A		-	-	-	-	-	0.195	-	-	0.160	-	-	0.175	-	-	-	-	-	0.175
3.4) IRD / SHIPALT / Class SIDS	A		-	-	1.080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5) Cyber & CR SHIPALT (Non-recurring)	A		-	-	-	-	-	0.856	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Support			**-**	**-**	***2.736***	**-**	**-**	***1.341***	**-**	**-**	***0.388***	**-**	**-**	***0.434***	**-**	**-**	**-**	**-**	**-**	***0.434***
Total			**-**	**-**	**10.014**	**-**	**-**	**4.000**	**-**	**-**	**5.368**	**-**	**-**	**3.862**	**-**	**-**	**-**	**-**	**-**	**3.862**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) FY21 funding supports the procurement of (5) submarine class systems for Ship, Submersible, Ballistic, Nuclear (SSBN) submarines.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2361 / Automatic Identification System (AIS)	**Aggregated Items Title:** 1U030 Automatic Identification System (AIS)

(2) FY 21 funding will procure (21) Cyber Security hardware kits. These modifications are required to address potential vulnerabilities identified by the Naval Cyber Warfare Development Group (NCWDG) and to protect systems and users of AIS data downstream from the data collection point. These users include Global Command and Control System - Maritime (GCCS-M), Global Command and Control System - Joint (GCCS-J), Distributed Common Ground System - Navy (DCGS-N), Electronic Chart Display and Information System - Navy (ECDIS-N), BYG-1 and others.

(3) Installation and design costs vary depending on the submarine class and hull being installed on and the location of the installation.

(4) FY21 funds will support the installation of 40 Cyber Security hardening kits across multiple ship and submarine classes.

(5) The FY21 DSA costs will support the drawing and design requirements to install Automatic Identification System (AIS) on four Ohio Class Ship, Submersible, Ballistic, Nuclear (SSBN) submarines in FY22.

(6) The FY21 DSA costs will support the drawing and design requirements for the various ship and submarine classes for the (35) Cyber Security hardening solutions that will be installed in FY22.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	**P-1 Line Item Number / Title:** 2361 / Automatic Identification System (AIS)	**Aggregated Items:** 1U030 Automatic Identification System (AIS)

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) 1U030 Automatic Identification Systems (AIS)												
1.1) AIS - Procurement (1)		2019	SRC / Atlanta, GA	C / FFP	NIWC - Atlantic	Nov 2018	Sep 2019	6	90.000	Y		
1.1) AIS - Procurement (1)		2020	Centurum / Charleston, SC	C / FFP	NIWC - Atlantic	Nov 2019	Sep 2020	4	92.000	Y		
1.1) AIS - Procurement (1)		2021	SRC / Atlanta, GA	C / TBD	NIWC - Atlantic	Nov 2020	Sep 2021	5	94.000	Y		
1.3) Cyber Security Hardware - Procurement (2)		2019	SRC / Atlanta, GA	C / CPFF	NIWC - Atlantic	Sep 2019	Mar 2020	65	21.000	N	Sep 2018	
1.3) Cyber Security Hardware - Procurement (2)		2020	SRC / Atlanta, GA	C / CPFF	NIWC - Atlantic	Dec 2019	Jun 2020	40	22.000	N	Sep 2018	
1.3) Cyber Security Hardware - Procurement (2)		2021	SRC / Atlanta, GA	C / CPFF	NIWC - Atlantic	Dec 2020	Jun 2021	21	24.000	N	Sep 2018	

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0607658N, 0603658N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	852.410	39.076	30.452	26.006	0.000	26.006	29.077	28.099	27.472	27.969	27.390	1,087.951
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	852.410	39.076	30.452	26.006	0.000	26.006	29.077	28.099	27.472	27.969	27.390	1,087.951
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**852.410**	**39.076**	**30.452**	**26.006**	**0.000**	**26.006**	**29.077**	**28.099**	**27.472**	**27.969**	**27.390**	**1,087.951**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.831	0.548	1.122	-	1.122	0.791	0.580	0.888	0.976	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2021 funding request was reduced by $2.000 million to account for the availability of prior year execution balances.

Cooperative Engagement Capability (CEC) significantly improves Battle Force Anti-Air Warfare (AAW) capability by coordinating all Battle Force AAW sensors into a single, real-time, composite track picture capable of fire control quality. CEC distributes sensor data from each ship and aircraft, or cooperating unit (CU), to all other CUs in the battle force through a real-time, line of sight, high data rate sensor and engagement data distribution network. CEC is highly resistant to jamming and provides accurate gridlocking between CUs. Each CU independently employs high capacity, parallel processing and advanced algorithms to combine all distributed sensor data into a fire control quality track picture which is the same for all CUs. CEC data is presented as a superset of the best AAW sensor capabilities from each CU; all of which are integrated into a single input to each CU's combat weapons system. CEC significantly improves Battle Force defense in depth, including both local area and ship defense capabilities against current and future AAW threats. Moreover, CEC provides critical connectivity and integration of over-land air defense systems capable of countering emerging air threats, including land attack cruise missiles, in a complex littoral environment.

CEC consists of the Data Distribution System (DDS), the Cooperative Engagement Processor (CEP), and Combat System modifications. The DDS encodes and distributes ownship sensor and engagement data and is a high capacity, jam resistant, directive system providing a precision gridlocking and high throughput of data. The CEP is a high capacity distributed processor that is able to process force levels of data in near real time. This data is passed to the ship's combat system as high quality data for which the ship can cue its onboard sensors or use the data to engage targets without actually tracking them. The CEC suite contains a C-Band antenna, the antenna's power and cooling equipment, a Signal Data Processor (SDP), and system support equipment. The current CEC Shipboard antenna variants include the Shipboard Active Aperture (SBAA) and the Planar Array Antenna Assembly (PAAA). The SDP hosts the CEP software and is common across all CEC variants. The USG-2B articles in this budget procure support hardware consisting of a ruggedized 19-inch rack that contains a Cesium time standard, input/output converter, power distribution and user interface control devices. The 19-inch rack holds the SDP. SBAA and PAAA support are provided by an Antenna Environmental Control Unit (AECU) or Environmental Control System Controller (ECSC), which provide power and cooling oil to the CEC shipboard antenna. Funding provided also procures the required Weapon Replaceable Assembly (WRA) hardware required for airborne variants of CEC.

A family of antennas approach will be used to satisfy CEC requirements with lower life cycle costs (procurement, installation, and maintenance) and reduced weight (on mast and below deck). These antennas enable future capability as well as providing a solution extensible to additional platforms. A competitive contract for Common Array Block (CAB) antenna development and production was awarded late FY13. CEC is planned for shipboard installations at various Naval and commercial shipyards aboard CG/CG Mod, DDG/DDG Mod, CV/CVN, LPD, LHD, DDG 1000, and LHA ship classes during scheduled ship availability periods and at land based test sites (LBTS).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0607658N, 0603658N	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P40A / UC002 - AN/UYQ-70 DISPLAY]: This is a sunk cost to fund the procurement of the AN/UYQ-70 display system for use and integration with the CEC system.

[P40A / UC004 - ECP/KIT PROCUREMENT]: These funds are for the procurement and installation of Engineering Change Proposals (ECPs)(AN/USG-2 to AN/USG-2B upgrades/AN/USG-2A to AN/USG-2B upgrades) Field Change Kits to address CEC parts obsolescence associated with interfacing systems on multiple platforms.

[P40A / UC005 - NON-RECURRING DEPOT COST]: This is a sunk cost to establish a depot for the CEC system.

[P40A / UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING]: This is a sunk cost to fund VISTA training related to the CEC system.

[P40A / UC008 - SUPPLY SUPPORT]: This is a sunk cost for Supply Support for the CEC system.

[P40A / UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)]: Funds are for the procurement of Signal Data Processors (SDP) backfits at Land Based Test Sites (LBTSs). There are no installation costs associated with these procurements because the installations will be performed by employees at the LBTSs.

[P40A / UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for the CEC AN/USG-2 system configuration.

[P40A / UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for the AN/USG-2A CEC system configuration.

[P40A / UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for CEC Land Based Test Sites.

[P40A / UC830 - PRODUCTION ENGR. SUPPORT]: These funds are required for the production engineering support of all CEC systems. This Cost Element includes indirect costs associated with the procurement and installation of individual field changes and upgrades. These costs would include field change and upgrade support, consolidated engineering support, Program Office support, and other costs. These costs will fluctuate with increases and decreases of overall budget, number and type of field changes and upgrades, and required support.

[P40A / UCCA1 - CONGRESSIONAL ADD]: These are Congressional add funds.

[P40A / UC016 SYSTEM COMPONENT UPGRADES]: These funds are for the procurement and installation of replacement CEC system components (Surface and Airborne) due to existing component degradation and corrosion as a result of these existing components being in use beyond their intended service life. Funds will support procurement of Environmental Control System Controllers (ECSC) Units and replacement ECSC components, Antenna Environmental Control Units (AECU) and replacement AECU components, Airborne Weapons Replaceable Assemblies (WRAs), replacement components of the Shipboard Active Array (SBAA) Antenna, and replacement components of the Planar Array Antenna Assembly (PAAA) Antenna

[P3A / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)]: These funds are for the procurement of CEC to backfit CG, DDG, CV/CVN, and LHD ship classes, as well as Land Based Test Sites (LBTSs).

[P3A - 2 / UC003 - PAAA BACKFIT KITS]: These funds are for the procurement of Planar Antenna Array Assembly (PAAA) backfit kits.

[P3A - 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)]: Funds are for the procurement of Signal Data Processors (SDP) backfits.

[P3A - 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)]: Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment.

[P3A - 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD]: Funds are for the procurement of Common Array Block (CAB) antennas for shipboard AN/USG-2B systems.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0607658N, 0603658N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-40a	COOPERATIVE ENGAGEMENT CAPABILITY	P-5a			- / 293.916	- / 17.674	- / 16.584	- / 11.387	- / -	- / 11.387
P-3a	1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) (SGAAW)				- / 450.131	- / 10.966	- / 2.047	- / 4.220	- / 0.000	- / 4.220
P-3a	2 / UC003 - PAAA BACKFIT KITS (SGAAW)				- / 61.947	- / 2.355	- / 1.211	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/ USG-2) (SGAAW)				- / 31.307	- / 7.660	- / 2.666	- / 2.317	- / 0.000	- / 2.317
P-3a	4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/ USG-2A) (SGAAW)				- / 15.109	- / 0.421	- / 0.804	- / 0.384	- / 0.000	- / 0.384
P-3a	5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD (SGAAW)				- / 0.000	- / 0.000	- / 7.140	- / 7.698	- / 0.000	- / 7.698
P-40	**Total Gross/Weapon System Cost**				**- / 852.410**	**- / 39.076**	**- / 30.452**	**- / 26.006**	**- / 0.000**	**- / 26.006**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)	Quantity / Total Cost (Each) I ($ M)
P-40a	COOPERATIVE ENGAGEMENT CAPABILITY	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) (SGAAW)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 467.364
P-3a	2 / UC003 - PAAA BACKFIT KITS (SGAAW)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 65.513
P-3a	3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/ USG-2) (SGAAW)				- / 1.533	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 45.483
P-3a	4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/ USG-2A) (SGAAW)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 16.718
P-3a	5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD (SGAAW)				- / 16.213	- / 16.904	- / 18.207	- / 18.516	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 29.077**	**- / 28.099**	**- / 27.472**	**- / 27.969**	**- / 27.390**	**- / 1,087.951**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Funds are to procure hardware and provide associated support for the CEC system. Requirements are driven by planned procurements of Common Array Block (CAB) Antenna , USG-2B ECP/Kits, System Component Upgrades (AECUs, ECSCs, WRAs, Replacement components for SBAA and PAAA antennas), and Installation of CEC Systems for LHD 3 and 5 and Installation of Signal Data Processor (SDP) backfit kits.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Aggregated Items Title:** COOPERATIVE ENGAGEMENT CAPABILITY

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) UC002 - AN/UYQ-70 DISPLAY																				
1.1) AN/UYQ-70 DISPLAY	A		-	-	21.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) UC002 - AN/UYQ-70 DISPLAY			**-**	**-**	***21.493***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) UC004 - ECP/KIT PROCUREMENT																				
2.1) ECP/KIT PROCUREMENT	A		-	-	106.814	-	-	6.547	-	-	4.341	-	-	4.115	-	-	-	-	-	4.115
Subtotal: 2) UC004 - ECP/KIT PROCUREMENT			**-**	**-**	***106.814***	**-**	**-**	***6.547***	**-**	**-**	***4.341***	**-**	**-**	***4.115***	**-**	**-**	**-**	**-**	**-**	***4.115***
3) UC005 - NON-RECURRING DEPOT COST																				
3.1) NON-RECURRING DEPOT SUPPORT	A		-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) UC005 - NON-RECURRING DEPOT COST			**-**	**-**	***4.500***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4) UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING																				
4.1) VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING	A		-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING			**-**	**-**	***0.700***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) UC008 - SUPPLY SUPPORT																				
5.1) SUPPLY SUPPORT	A		-	-	6.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) UC008 - SUPPLY SUPPORT			**-**	**-**	***6.094***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)																				
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)(†)	A		344,400.00	20	6.888	236,331.00	1	0.236	241,058.00	4	0.964	-	-	-	-	-	-	-	-	-
Subtotal: 6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)			**-**	**-**	***6.888***	**-**	**-**	***0.236***	**-**	**-**	***0.964***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)																				
7.1) AN/USG-2B HARDWARE	A		357,000.00	22	7.854	399,545.00	9	3.596	407,536.00	3	1.223	-	-	-	-	-	-	-	-	-

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Aggregated Items Title:** COOPERATIVE ENGAGEMENT CAPABILITY

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
CONVERSION KITS (AN/USG-2)(†)																				
Subtotal: 7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)			-	-	***7.854***	-	-	***3.596***	-	-	***1.223***	-	-	-	-	-	-	-	-	-
8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)																				
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)(†)	A		272,076.92	13	3.537	304,837.00	1	0.305	314,200.00	2	0.628	-	-	-	-	-	-	-	-	-
Subtotal: 8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)			-	-	***3.537***	-	-	***0.305***	-	-	***0.628***	-	-	-	-	-	-	-	-	-
9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)																				
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)(†)	A		381,750.00	12	4.581	402,124.00	1	0.402	410,000.00	4	1.640	-	-	-	-	-	-	-	-	-
Subtotal: 9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)			-	-	***4.581***	-	-	***0.402***	-	-	***1.640***	-	-	-	-	-	-	-	-	-
10) UC830 - PRODUCTION ENGR. SUPPORT (1)																				
10.1) PRODUCTION ENGR. SUPPORT	A		-	-	93.916	-	-	6.588	-	-	4.188	-	-	4.172	-	-	-	-	-	4.172
Subtotal: 10) UC830 - PRODUCTION ENGR. SUPPORT			-	-	***93.916***	-	-	***6.588***	-	-	***4.188***	-	-	***4.172***	-	-	-	-	-	***4.172***
11) UCCA1 - CONGRESSIONAL ADD																				
11.1) CONGRESSIONAL ADD	A		-	-	23.249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) UCCA1 - CONGRESSIONAL ADD			-	-	***23.249***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12) UC6IN - NON-FMP INSTALLATION																				
12.1) NON-FMP INSTALLATION	A		-	-	14.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 12) UC6IN - NON-FMP INSTALLATION			-	-	***14.290***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13) UC016 SYSTEM COMPONENT UPGRADES (2)																				
13.1) SYSTEM COMPONENT UPGRADES	A		-	-	-	-	-	-	-	-	3.600	-	-	3.100	-	-	-	-	-	3.100
Subtotal: 13) UC016 SYSTEM COMPONENT UPGRADES			-	-	***0.000***	-	-	-	-	-	***3.600***	-	-	***3.100***	-	-	-	-	-	***3.100***

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Aggregated Items Title:** COOPERATIVE ENGAGEMENT CAPABILITY

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Total			-	-	293.916	-	-	17.674	-	-	16.584	-	-	11.387	-	-	-	-	-	11.387

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) These funds are required for the production engineering support of all CEC systems. This Cost Element includes indirect costs associated with the procurement and installation of individual field changes and upgrades. These costs would include field change and upgrade support, consolidated engineering support, Program Office support, and other costs. These costs will fluctuate with increases and decreases of overall budget, number and type of field changes and upgrades, and required support.

(2) Funds are for the procurement of replacement CEC system components (Surface and Airborne) due to existing component degradation and corrosion as a result of these existing components being in use beyond their intended service life.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability	Aggregated Items: COOPERATIVE ENGAGEMENT CAPABILITY

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)												
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2011	Sechan Electronics, Inc. / Lititz, PA	C / IDIQ	Washington, DC	Dec 2011	Jun 2013	5	450,000.00	Y		Dec 2010
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2012	Sechan Electronics, Inc. / Lititz, PA	SS / IDIQ	Washington, DC	Dec 2012	Jun 2014	3	669,000.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2014	Sechan Electronics, Inc. / Lititz, PA	SS / IDIQ	Washington, DC	May 2014	Nov 2015	3	194,094.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2015	Sechan Electronics, Inc. / Lititz, PA	SS / IDIQ	Washington, DC	May 2015	Nov 2016	2	218,500.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2017 (3)	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	May 2017	Nov 2018	2	227,154.00	Y		Aug 2016
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2018 (4)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	May 2018	Nov 2019	5	231,697.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2019 (5)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	May 2019	May 2020	1	236,331.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2020 (6)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	May 2020	May 2021	4	241,058.00	Y		
7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)												
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2014 (7)	Raytheon / St. Petersburg, FL	SS / FFP	Washington, DC	Apr 2014	Jun 2015	8	361,750.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2015 (8)	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	Aug 2015	Oct 2016	8	369,000.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2016 (9)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Jul 2016	Sep 2017	2	224,500.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2017 (10)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2017	May 2018	1	383,833.33	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2018 (11)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2018	May 2019	3	391,600.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2019	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2019	Mar 2020	9	399,545.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2020	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2020	Mar 2021	3	407,536.00	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability	Aggregated Items: COOPERATIVE ENGAGEMENT CAPABILITY

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)												
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2014 (12)	Raytheon / St. Petersburg, FL	SS / FFP	Washington, DC	Apr 2014	Jun 2015	7	276,060.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2015 (13)	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	Aug 2015	Oct 2016	3	281,666.67	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2016 (14)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Jul 2016	Sep 2017	1	168,000.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2017 (15)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2017	May 2018	1	293,000.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2018 (16)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2018	May 2019	1	299,000.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2019 (17)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2019	Mar 2020	1	304,837.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2020 (18)	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2020	Mar 2021	2	314,200.00	Y		
9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)												
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2014 (19)	Raytheon / St. Petersburg, FL	SS / FFP	Washington, DC	Apr 2014	Jun 2015	3	364,410.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2015 (20)	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	Aug 2015	Oct 2016	2	371,500.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2017	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2017	May 2018	2	386,509.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2018	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2018	May 2019	5	394,300.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2019	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2019	Mar 2020	1	402,124.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2020	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2020	Mar 2021	4	410,000.00	Y		

Footnotes:

(3) This will be a competitively awarded contract 3Q FY17 with options in FY18.

(4) 2018 - Option Year 1 of DRS SDP-S Contract

(5) 2019 - Option Year 2 of DRS SDP-S Contract

(6) 2020 - Option Year 3 of DRS SDP-S Contract

(7) The last option year under the current CEC Production contract was FY14. Two additional option years have been added to the contract for FY15 and FY16.

(8) Procurement of this equipment transitioned to a new Production contract starting in FY15.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Aggregated Items:** COOPERATIVE ENGAGEMENT CAPABILITY

(9) 2016 - Option Year 1 of DRS Production Contract
(10) 2017- Option Year 2 of DRS Production Contract
(11) 2018- Option Year 3 of DRS Production Contract
(12) The last option year under the current CEC Production contract was FY14. Two additional option years have been added to the contract for FY15 and FY16.
(13) Procurement of this equipment transitioned to a new Production contract starting in FY15.
(14) 2016 - Option Year 1 of DRS Production Contract
(15) 2017 - Option Year 2 of DRS Production Contract
(16) 2018 - Option Year 3 of DRS Production Contract
(17) 2019 - Option Year 4 of DRS Production Contract
(18) 2020 - Option Year 5 of DRS Production Contract
(19) The last option year under the current CEC Production contract was FY14. Two additional option years have been added to the contract for FY15 and FY16.
(20) Procurement of this equipment transitioned to a new Production contract starting in FY15.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	450.131	10.966	2.047	4.220	0.000	4.220	0.000	0.000	0.000	0.000	0.000	467.364
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	450.131	10.966	2.047	4.220	0.000	4.220	0.000	0.000	0.000	0.000	0.000	467.364
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**450.131**	**10.966**	**2.047**	**4.220**	**0.000**	**4.220**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**467.364**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. These funds are for the procurement and installation of CEC to backfit CG, DDG, CV/CVN, and LHD ship classes, as well as various Land Based Test Sites (LBTSs).

[COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)] Installation costs in FY21 were adjusted to align with latest estimates from In Service Engineering Agent (ISEA).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UC001 COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (CETPS) (AN/USG-2/2A/2B)	**Modification Type:** SGAAW	**Related RDT&E PEs:** 0603755N, 0603658N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)												
B Kits												
Recurring												
1.1.1) COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) - NonOrganic	50 / 373.251	2 / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	52 / 384.035
Subtotal: Recurring	*- / 373.251*	*- / 10.784*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 384.035*
Subtotal: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)	*50 / 373.251*	*2 / 10.784*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*52 / 384.035*
Subtotal: Procurement, All Modification Items	*- / 373.251*	*- / 10.784*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 384.035*
Installation												
Modification Item 1 of 1: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)	- / 76.880	- / 0.182	- / 2.047	- / 4.220	- / 0.000	- / 4.220	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 83.329
Subtotal: Installation	*- / 76.880*	*- / 0.182*	*- / 2.047*	*- / 4.220*	*- / -*	*- / 4.220*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 83.329*
Total												
Total Cost (Procurement + Support + Installation)	**450.131**	**10.966**	**2.047**	**4.220**	**0.000**	**4.220**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**467.364**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)

Manufacturer Information

Manufacturer Name: DRS Laurel Technologies | Manufacturer Location: Largo, FL

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019						
Delivery Dates	Sep 2020						

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSI

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	49 / 76.880	0 / 0.182	1 / 2.047	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	50 / 79.109
FY 2019	- / -	- / -	- / -	2 / 4.220	0 / 0.000	2 / 4.220	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.220
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	49 / 76.880	0 / 0.182	1 / 2.047	2 / 4.220	0 / 0.000	2 / 4.220	- / -	- / -	- / -	- / -	0 / 0.000	52 / 83.329

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	49	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52
Out	49	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 2 / UC003 - PAAA BACKFIT KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	61.947	2.355	1.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	65.513
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	61.947	2.355	1.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	65.513
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**61.947**	**2.355**	**1.211**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**65.513**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. The Planar Antenna Array Assembly (PAAA) Backfit Kit procurements will be replaced with Common Array Block (CAB) - Shipboard Antenna procurements commencing in FY19. PAAA Backfit Kits are installed on CG, DDG, CVN, LPD, and LHD ship classes

[PAAA BACKFIT KITS] The Planar Antenna Array Assembly (PAAA) antenna being installed in FY 20 will replace an older Shipboard Active Aperture (SBAA) antenna currently in the Fleet. These SBAAs are very expensive to maintain and some of the parts are becoming obsolete. PAAA Backfit Kits are installed on CG, DDG, CVN, LPD, and LHD ship classes.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 2 / UC003 - PAAA BACKFIT KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UC003 PAAA BACKFIT KITS	**Modification Type:** SGAAW	**Related RDT&E PEs:** 0603755N, 0603658N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: UC003 - PAAA BACKFIT KITS												
B Kits												
Non-Recurring												
1.1.1) PAAA BACKFIT KITS - NonOrganic	13 / 43.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 43.312
Subtotal: Non-Recurring	*- / 43.312*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 43.312*
Subtotal: UC003 - PAAA BACKFIT KITS	*13 / 43.312*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*13 / 43.312*
Subtotal: Procurement, All Modification Items	*- / 43.312*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 43.312*
Installation												
Modification Item 1 of 1: UC003 - PAAA BACKFIT KITS	- / 18.635	- / 2.355	- / 1.211	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 22.201
Subtotal: Installation	*- / 18.635*	*- / 2.355*	*- / 1.211*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 22.201*
Total												
Total Cost (Procurement + Support + Installation)	**61.947**	**2.355**	**1.211**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**65.513**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 2 / UC003 - PAAA BACKFIT KITS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: UC003 - PAAA BACKFIT KITS

Manufacturer Information

Manufacturer Name: RAYTHEON [21] | Manufacturer Location: ST. PETERSBURG, FL

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: PAAA BACKFIT KITS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	11 / 18.635	1 / 2.355	1 / 1.211	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 22.201
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	11 / 18.635	1 / 2.355	1 / 1.211	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 22.201

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	11	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Out	11	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13

Footnotes:

[21] PAAA Backfit Kits are partial systems. The last option year under the current CEC Production contract is FY 2016.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	31.307	7.660	2.666	2.317	0.000	2.317	1.533	0.000	0.000	0.000	0.000	45.483
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	31.307	7.660	2.666	2.317	0.000	2.317	1.533	0.000	0.000	0.000	0.000	45.483
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**31.307**	**7.660**	**2.666**	**2.317**	**0.000**	**2.317**	**1.533**	**0.000**	**0.000**	**0.000**	**0.000**	**45.483**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Signal Data Processors (SDP) backfits in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes

[SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2)] Prior Year and FY12 includes funding to procure AN/USG-2B hardware conversion kits. A new cost code (UC013) was created and the funding for the hardware conversion kits has been realigned to this cost code for FY13-18.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Models of Systems Affected: UC009 SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2)	Modification Type: SGAAW	Related RDT&E PEs: 0603755N, 0603658N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)												
B Kits												
Recurring												
1.1.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2) - NonOrganic (22)	33 / 13.188	9 / 2.127	3 / 0.723	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	45 / 16.038
Subtotal: Recurring	*- / 13.188*	*- / 2.127*	*- / 0.723*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 16.038*
Subtotal: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)	*33 / 13.188*	*9 / 2.127*	*3 / 0.723*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*45 / 16.038*
Subtotal: Procurement, All Modification Items	*- / 13.188*	*- / 2.127*	*- / 0.723*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 16.038*
Installation												
Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)	- / 18.119	- / 5.533	- / 1.943	- / 2.317	- / 0.000	- / 2.317	- / 1.533	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 29.445
Subtotal: Installation	*- / 18.119*	*- / 5.533*	*- / 1.943*	*- / 2.317*	*- / -*	*- / 2.317*	*- / 1.533*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 29.445*
Total												
Total Cost (Procurement + Support + Installation)	**31.307**	**7.660**	**2.666**	**2.317**	**0.000**	**2.317**	**1.533**	**0.000**	**0.000**	**0.000**	**0.000**	**45.483**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

Manufacturer Information

Manufacturer Name: Sechan Electronics, Inc. (23) | Manufacturer Location: Lititz, PA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Manufacturer Name: DRS Laurel Technologies (24) | Manufacturer Location: Largo, FL

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	May 2019	May 2020					
Delivery Dates	Nov 2020	Nov 2021					

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	26 / 18.119	4 / 2.454	3 / 1.533	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	33 / 22.106
FY 2019	- / -	5 / 3.079	0 / 0.410	4 / 2.044	0 / 0.000	4 / 2.044	- / -	- / -	- / -	- / -	0 / 0.000	9 / 5.533
FY 2020	- / -	- / -	- / -	0 / 0.273	0 / 0.000	0 / 0.273	3 / 1.533	- / -	- / -	- / -	0 / 0.000	3 / 1.806
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	26 / 18.119	9 / 5.533	3 / 1.943	4 / 2.317	0 / 0.000	4 / 2.317	3 / 1.533	- / -	- / -	- / -	0 / 0.000	45 / 29.445

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	26	2	-	1	6	-	1	2	-	1	-	3	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45
Out	26	2	-	1	6	-	1	2	-	1	-	3	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45

Footnotes:

(22) A new cost code (UC013) was created and the funding for the hardware conversion kits has been realigned to this cost code for FY13-18. Funds are for the procurement of Signal Data Processors (SDP) backfits in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes.

(23) The last option year under the prior SDP-S Production contract with Sechan Electronics is FY16.

(24) A competitive follow-on contract was awarded in 4Q FY2017 to DRS Laurel Technologies.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	15.109	0.421	0.804	0.384	0.000	0.384	0.000	0.000	0.000	0.000	0.000	16.718
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	15.109	0.421	0.804	0.384	0.000	0.384	0.000	0.000	0.000	0.000	0.000	16.718
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**15.109**	**0.421**	**0.804**	**0.384**	**0.000**	**0.384**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**16.718**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Models of Systems Affected: UC010 SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)	Modification Type: SGAAW	Related RDT&E PEs: 0603755N, 0603658N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)												
B Kits												
Recurring												
1.1.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) - NonOrganic (25)	23 / 7.955	1 / 0.236	2 / 0.482	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	26 / 8.673
Subtotal: Recurring	*- / 7.955*	*- / 0.236*	*- / 0.482*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.673*
Subtotal: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)	*23 / 7.955*	*1 / 0.236*	*2 / 0.482*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*26 / 8.673*
Subtotal: Procurement, All Modification Items	*- / 7.955*	*- / 0.236*	*- / 0.482*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.673*
Installation												
Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)	- / 7.154	- / 0.185	- / 0.322	- / 0.384	- / 0.000	- / 0.384	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.045
Subtotal: Installation	*- / 7.154*	*- / 0.185*	*- / 0.322*	*- / 0.384*	*- / -*	*- / 0.384*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.045*
Total												
Total Cost (Procurement + Support + Installation)	**15.109**	**0.421**	**0.804**	**0.384**	**0.000**	**0.384**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**16.718**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)

Manufacturer Information

Manufacturer Name: Sechan Electronics, Inc. (26) | Manufacturer Location: Lititz, PA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Manufacturer Name: DRS Laurel Technologies (27) | Manufacturer Location: Largo, FL

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020					
Delivery Dates	Sep 2020	Sep 2021					

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	21 / 7.154	2 / 0.161	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	23 / 7.315
FY 2019	- / -	0 / 0.024	1 / 0.161	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.185
FY 2020	- / -	- / -	0 / 0.161	2 / 0.384	0 / 0.000	2 / 0.384	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.545
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	21 / 7.154	2 / 0.185	1 / 0.322	2 / 0.384	0 / 0.000	2 / 0.384	- / -	- / -	- / -	- / -	0 / 0.000	26 / 8.045

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	21	1	-	-	1	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26
Out	21	1	-	-	1	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26

Footnotes:

(25) Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes.

(26) The last option year under the current SDP-S Production contract is FY16.

(27) A competitive follow-on contract was awarded in 4Q FY2017.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	7.140	7.698	0.000	7.698	16.213	16.904	18.207	18.516	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	7.140	7.698	0.000	7.698	16.213	16.904	18.207	18.516	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**7.140**	**7.698**	**0.000**	**7.698**	**16.213**	**16.904**	**18.207**	**18.516**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Common Array Block (CAB) antennas for shipboard AN/USG-2B systems in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes.

CAB program delays and cost overruns have led to delayed Pre-Production Unit (PPU) negotiations as well as cost growth to PPUs and potentially follow on Production Units. Efforts are underway to reduce cost on future CAB contracts in order to better align with CEC OPN budget. Additionally, required contracting actions are taking place to enable Planar Array Antenna Assembly (PAAA) production restart for FY 19 and FY20 CEC OPN Backfit Antenna requirements in the event of further delays or cost growth to the CAB program and units in order to support on time ship installs.

Unit cost has been updated in accordance with latest proposal pricing from OEM to $7M per unit in FY 19 and is escalated in FY20-FY25. Procurement and Installation quantities per year have been lowered due to higher unit cost.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UC012 COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD	**Modification Type:** SGAAW	**Related RDT&E PEs:** 0603755N, 0603658N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD												
B Kits												
Recurring												
1.1.1) COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD - NonOrganic [28]	- / -	- / -	1 / 7.140	1 / 7.283	- / -	1 / 7.283	2 / 14.857	2 / 15.154	2 / 15.457	2 / 15.766	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 7.140*	*- / 7.283*	*- / -*	*- / 7.283*	*- / 14.857*	*- / 15.154*	*- / 15.457*	*- / 15.766*	*Continuing*	*Continuing*
Subtotal: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD	*- / -*	*- / -*	*1 / 7.140*	*1 / 7.283*	*- / -*	*1 / 7.283*	*2 / 14.857*	*2 / 15.154*	*2 / 15.457*	*2 / 15.766*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 7.140*	*- / 7.283*	*- / -*	*- / 7.283*	*- / 14.857*	*- / 15.154*	*- / 15.457*	*- / 15.766*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD	- / 0.000	- / 0.000	- / 0.000	- / 0.415	- / 0.000	- / 0.415	- / 1.356	- / 1.750	- / 2.750	- / 2.750	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 0.415*	*- / -*	*- / 0.415*	*- / 1.356*	*- / 1.750*	*- / 2.750*	*- / 2.750*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**7.140**	**7.698**	**0.000**	**7.698**	**16.213**	**16.904**	**18.207**	**18.516**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD

Manufacturer Information

Manufacturer Name: RAYTHEON	Manufacturer Location: ST. PETERSBURG, FL
Administrative Leadtime *(in Months)*: 18	Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Jun 2020	Jun 2021				
Delivery Dates		Dec 2021	Dec 2022				

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 18	Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				Jun 2022	Jun 2023	Jun 2024	
Delivery Dates				Dec 2023	Dec 2024	Dec 2025	

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	0 / 0.415	0 / 0.000	0 / 0.415	1 / 1.000	- / -	- / -	- / -	0 / 0.000	1 / 1.415
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.356	1 / 1.000	- / -	- / -	0 / 0.000	1 / 1.356
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.750	2 / 2.000	- / -	0 / 0.000	2 / 2.750
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.750	2 / 2.000	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.750	Continuing	Continuing
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	0 / 0.415	0 / 0.000	0 / 0.415	1 / 1.356	1 / 1.750	2 / 2.750	2 / 2.750	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2606 / Cooperative Engagement Capability	**Modification Number / Title:** 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	1	-	-	1	1	-	40	46
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	1	-	-	1	1	-	40	46

Footnotes:

(28) Removed Prior year Procurements and installation costs from FY 17 and Installation costs for FY 18 and FY 19 to reflect congressional reduction in FY 17 ($4.069M) and schedule delays. Additionally, contracting actions are taking place to enable Planar Array Antenna Assembly (PAAA) production restart for CEC OPN Backfit Antenna requirements in the event of further delays or cost growth to the CAB program and units in order to support on time ship installs. Unit cost has been updated in accordance with latest proposal pricing from OEM to $7.0M per unit in FY 19 and is escalated in FY21-25. Procurement and installation quantities per year have been lowered due to higher unit cost. CAB Backfit procurement and installation reductions were made in order to maintain alignment of USG-2B Fleet Installation schedules with the SSDS combat system modernization plans. Remaining funding was realigned to UC830 and UC004. Installation costs in FY21-FY25 were adjusted to align with latest estimates from In Service Engineering Agent (ISEA). Reduced Procurement from 2 to 1 in FY 20 and Installation from 2 to 1 in FY 22 to account for Issue 77102: Common Array Block previously funded. This is a reduction of $4.676M

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	643.492	11.391	15.154	15.385	0.000	15.385	16.476	18.124	18.377	18.740	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	643.492	11.391	15.154	15.385	0.000	15.385	16.476	18.124	18.377	18.740	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**643.492**	**11.391**	**15.154**	**15.385**	**0.000**	**15.385**	**16.476**	**18.124**	**18.377**	**18.740**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.128	0.103	0.299	-	0.299	0.231	0.234	0.238	0.243	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Naval Tactical Command Support System (NTCSS) is the logistics information system which enables combat lethality by generating and sustaining Navy and Marine Corps force materiel readiness for operational commanders afloat and ashore. NTCSS provides organizational maintenance management capabilities for all afloat and ashore operational forces (ships, submarines, expeditionary, and cyber), as well as organizational and intermediate maintenance management to maintain operational availability of deployed and deployable aircraft. NTCSS also provides personnel administration capabilities, planning and execution of warehouse and inventory management functions for repair parts and consumable material, financial accountability thereof, and support services of food and afloat retail point-of-sale operations. NTCSS system upgrades procures afloat and ashore ruggedized, commercial-off-the-shelf (COTS) computing equipment, which includes servers to support the NTCSS application and database, personal computers (PCs) that will interface with the servers for maintenance and supply transactions, and printers to display output. COTS software, which includes the operating system, comes loaded on the servers and PCs.

Naval Operational Business Logistics Enterprise (NOBLE) family of systems will provide direct support to warfighter readiness with maintenance, supply, and personnel administration capabilities using an open architecture framework that incorporates business process re-engineering (BPR) allowing for the consolidation of standalone application systems. These capabilities include enterprise-wide automation of supply, inventory, and financial functions to the Naval supply system, aviation maintenance support capability that services all levels of aviation maintenance (organizational, intermediate, and depot) for over 2,100 Navy and Marine Corps aircraft, standardized operational business processes for afloat maritime maintenance activities to all naval ships, and Navy-wide personnel and administration data sharing across shipboard and shore-based information systems. NOBLE will meet current and emerging demands for cyber, Financial Improvement and Audit Readiness (FIAR), and Navy logistics and maritime maintenance mission requirements. NOBLE initial fielding procures afloat and ashore ruggedized, commercial-off-the-shelf (COTS) computing equipment, which includes servers to support the NOBLE application and database, personal computers (PCs) that will interface with the servers for maintenance and supply transactions, and printers to display output. COTS software, which includes the operating system, comes loaded on the servers and PCs.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / NTCSS and NOBLE Ship Set Equipment Upgrades	P-5a			- / 311.524	- / 4.593	- / 7.145	- / 7.648	- / 0.000	- / 7.648
P-3a	2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006) (TBD)				- / 331.968	- / 6.798	- / 8.009	- / 7.737	- / 0.000	- / 7.737
P-40	**Total Gross/Weapon System Cost**				**- / 643.492**	**- / 11.391**	**- / 15.154**	**- / 15.385**	**- / 0.000**	**- / 15.385**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / NTCSS and NOBLE Ship Set Equipment Upgrades	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006) (TBD)				- / 7.692	- / 5.601	- / 5.086	- / 7.381	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 16.476**	**- / 18.124**	**- / 18.377**	**- / 18.740**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Funding for FY 2021 procures: 1) NTCSS system upgrades for ships; 2) NTCSS system upgrades for Naval Air Stations (NAS), Squadrons, Shore Support Facilities, Fleet Training Centers, Marine Aviation Logistics Squadrons (MALS), Navy Expeditionary Combat Command sites, Special Warfare units, and Commander Naval Surface Forces; 3) NOBLE system initial fielding for Naval Air Squadrons, Marine Aviation Logistics Squadrons (MALS), Navy Expeditionary Combat Command sites, and Special Warfare units; and 4) necessary production engineering and installation support.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Item Number / Title [DODIC]:** 1 / NTCSS and NOBLE Ship Set Equipment Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	311.524	4.593	7.145	7.648	0.000	7.648
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	311.524	4.593	7.145	7.648	0.000	7.648
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**311.524**	**4.593**	**7.145**	**7.648**	**0.000**	**7.648**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - NTCSS Ship Set Equipment Upgrades (DY005) Cost																		
Recurring Cost																		
1.1.1) Equipment(†) (1)	206.238	770	158.803	35.301	70	2.471	29.832	70	2.088	1.906	64	0.122	-	-	0.000	1.906	64	0.122
Subtotal: Recurring Cost	-	-	*158.803*	-	-	*2.471*	-	-	*2.088*	-	-	*0.122*	-	-	*0.000*	-	-	*0.122*
Subtotal: Flyaway - NTCSS Ship Set Equipment Upgrades (DY005) Cost	**-**	**-**	***158.803***	**-**	**-**	***2.471***	**-**	**-**	***2.088***	**-**	**-**	***0.122***	**-**	**-**	***0.000***	**-**	**-**	***0.122***
Flyaway - NOBLE Equipment Upgrades Cost																		
Recurring Cost																		
2.1.1) Ship Set Equipment Upgrades (DY995)(†) (2)	-	-	0.000	-	-	0.000	-	-	0.000	22.000	4	0.088	-	-	0.000	22.000	4	0.088
2.1.2) MALS/Shore Equipment Upgrades (DY996)(†) (3)	-	-	0.000	-	-	0.000	66.720	25	1.668	233.571	7	1.635	-	-	0.000	233.571	7	1.635
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*1.668*	-	-	*1.723*	-	-	*0.000*	-	-	*1.723*
Subtotal: Flyaway - NOBLE Equipment Upgrades Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***1.668***	**-**	**-**	***1.723***	**-**	**-**	***0.000***	**-**	**-**	***1.723***
Flyaway - Installations Cost																		
Recurring Cost																		
3.1.1) NTCSS Afloat Installation (4)	-	-	133.262	-	-	1.800	-	-	1.736	-	-	4.477	-	-	0.000	-	-	4.477
3.1.2) NTCSS DSA	-	-	5.527	-	-	0.175	-	-	0.180	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Item Number / Title [DODIC]:** 1 / NTCSS and NOBLE Ship Set Equipment Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
3.1.3) NOBLE Afloat Installation (DY777)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.562	-	-	0.000	-	-	0.562
3.1.4) NOBLE Ashore Installations (DY776)	-	-	0.000	-	-	0.000	-	-	1.149	-	-	0.635	-	-	0.000	-	-	0.635
3.1.5) NOBLE Ashore DSA (DY776)	-	-	0.000	-	-	0.000	-	-	0.098	-	-	0.023	-	-	0.000	-	-	0.023
Subtotal: Recurring Cost	-	-	*138.789*	-	-	*1.975*	-	-	*3.163*	-	-	*5.697*	-	-	*0.000*	-	-	*5.697*
Subtotal: Flyaway - Installations Cost	**-**	**-**	***138.789***	**-**	**-**	***1.975***	**-**	**-**	***3.163***	**-**	**-**	***5.697***	**-**	**-**	***0.000***	**-**	**-**	***5.697***
Support - Support Costs (DR555) Cost																		
4.1) NTCSS Afloat Production Support	-	-	13.932	-	-	0.147	-	-	0.125	-	-	0.007	-	-	0.000	-	-	0.007
4.2) NOBLE Production Support	-	-	0.000	-	-	0.000	-	-	0.101	-	-	0.099	-	-	0.000	-	-	0.099
Subtotal: Support - Support Costs (DR555) Cost	**-**	**-**	***13.932***	**-**	**-**	***0.147***	**-**	**-**	***0.226***	**-**	**-**	***0.106***	**-**	**-**	***0.000***	**-**	**-**	***0.106***
Gross/Weapon System Cost	**-**	**-**	**311.524**	**-**	**-**	**4.593**	**-**	**-**	**7.145**	**-**	**-**	**7.648**	**-**	**-**	**0.000**	**-**	**-**	**7.648**

Remarks:
Provides ADP system upgrades and NTCSS-Optimized software to Battle Group and unit level ships.

Application subsystems include financial/inventory management, organizational and surface maintenance management, and administrative information systems support. NTCSS procurements will also provide ship capabilities for displaying and storing Computer-aided Acquisition and Logistics Support (CALS) initiative information (digitized engineering drawings, automated technical manuals, etc.).

[Flyaway] NOBLE will be fielded at program-of-record (POR) afloat and ashore sites. Ship set and MALS/Shore equipment upgrades continue; hardware and software upgrades required for obsolescence avoidance.

Provides ADP system upgrades and NOBLE software to force level and unit level ships.

NOBLE MALS/Shore Equipment Upgrades (DY996): Quantity changes from year to year are driven by fact-of-life changes to ashore site availability schedules. The variance in unit cost between fiscal years is attributed to the composition of ashore site configurations that NOBLE will be procuring and installing in any given fiscal year.

(†) indicates the presence of a P-5a

Footnotes:

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Item Number / Title [DODIC]:** 1 / NTCSS and NOBLE Ship Set Equipment Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(1) Quantity changes from year to year are driven by fact-of-life changes to ship maintenance availability schedules. The average unit cost fluctuation is primarily attributed to variance in system configuration requirements for each NTCSS platform type. In FY21, NTCSS transitions to a CANES hosted environment. The unit cost represents the cost of software licenses, as well as hardware for non-CANES platforms.

(2) Quantity changes from year to year are driven by fact-of-life changes to ship maintenance availability schedules. The average unit cost fluctuation is primarily attributed to variance in system configuration requirements for each NOBLE platform type. NOBLE Afloat fielding is scheduled to commence in FY21.

(3) For 2.1.2 MALS/Shore Equipment Upgrades in FY21, the unit cost of $233.571K is based on upgrading the Virtual Environment(VE) h/w configuration at the seven (7) MALS sites, which is the central hosting element supporting up to 25 squadrons. Whereas in FY20, the unit cost of $66.720K supported refreshing the individual squadron's deployment h/w configuration.

(4) In FY21, the scope of installation increases in support of fielding NTCSS 4.40, which adds Food Service Management (FSM) and Retail Operation Management (ROM) software programs into the NTCSS Family of Systems.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Item Number / Title [DODIC]:** 1 / NTCSS and NOBLE Ship Set Equipment Upgrades

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Equipment		2019	NIWC LANT / Charleston, SC	WR	Charleston, SC	Nov 2018	Jan 2019	70	35.301	Y		Oct 2018
1.1.1) Equipment		2020	NIWC LANT / Charleston, SC	WR	Charleston, SC	Nov 2019	Jan 2020	70	29.832	Y		Oct 2019
1.1.1) Equipment		2021	NIWC LANT / Charleston, SC	WR	Charleston, SC	Nov 2020	Jan 2021	64	1.906	Y		Oct 2020
2.1.1) Ship Set Equipment Upgrades (DY995)		2021	TBD / TBD	TBD	TBD	Feb 2021	Apr 2021	4	22.000	Y		
2.1.2) MALS/Shore Equipment Upgrades (DY996)		2020	NIWC/ATLANTIC / NIWC/ATLANTIC	WR	Charleston, SC	Nov 2019	Jan 2020	25	66.720	Y		Oct 2019
2.1.2) MALS/Shore Equipment Upgrades (DY996)		2021	NIWC/ATLANTIC / NIWC/ATLANTIC	WR	Charleston, SC	Nov 2020	Jan 2021	7	233.571	Y		Oct 2020

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Modification Number / Title:** 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	331.968	6.798	8.009	7.737	0.000	7.737	7.692	5.601	5.086	7.381	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	331.968	6.798	8.009	7.737	0.000	7.737	7.692	5.601	5.086	7.381	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**331.968**	**6.798**	**8.009**	**7.737**	**0.000**	**7.737**	**7.692**	**5.601**	**5.086**	**7.381**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:
NTCSS-Optimized software will continue to be fielded at program-of-record (POR) afloat and ashore sites. Ship set and MALS/Shore equipment upgrades continue; hardware and software upgrades required for obsolescence avoidance.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Modification Number / Title:** 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Provides ADP system upgrades and NTCSS-Optimized software to force level and unit level ships.	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)												
B Kits												
Recurring												
1.1.1) Equipment - NonOrganic (5)	1,456 / 206.245	49 / 3.717	72 / 4.018	80 / 2.500	- / -	80 / 2.500	85 / 2.187	68 / 1.278	32 / 1.978	44 / 2.990	Continuing	Continuing
Subtotal: Recurring	*- / 206.245*	*- / 3.717*	*- / 4.018*	*- / 2.500*	*- / -*	*- / 2.500*	*- / 2.187*	*- / 1.278*	*- / 1.978*	*- / 2.990*	*Continuing*	*Continuing*
Subtotal: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)	*1,456 / 206.245*	*49 / 3.717*	*72 / 4.018*	*80 / 2.500*	*- / -*	*80 / 2.500*	*85 / 2.187*	*68 / 1.278*	*32 / 1.978*	*44 / 2.990*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 206.245*	*- / 3.717*	*- / 4.018*	*- / 2.500*	*- / -*	*- / 2.500*	*- / 2.187*	*- / 1.278*	*- / 1.978*	*- / 2.990*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Production Support	- / 13.965	- / 0.222	- / 0.241	- / 0.150	- / 0.000	- / 0.150	- / 0.132	- / 0.078	- / 0.121	- / 0.179	Continuing	Continuing
2.2) DSA	- / 3.093	- / 0.060	- / 0.045	- / 0.328	- / 0.000	- / 0.328	- / 0.342	- / 0.308	- / 0.232	- / 0.372	Continuing	Continuing
Subtotal: Support	*- / 17.058*	*- / 0.282*	*- / 0.286*	*- / 0.478*	*- / -*	*- / 0.478*	*- / 0.474*	*- / 0.386*	*- / 0.353*	*- / 0.551*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)	- / 108.665	- / 2.799	- / 3.705	- / 4.759	- / 0.000	- / 4.759	- / 5.031	- / 3.937	- / 2.755	- / 3.840	Continuing	Continuing
Subtotal: Installation	*- / 108.665*	*- / 2.799*	*- / 3.705*	*- / 4.759*	*- / -*	*- / 4.759*	*- / 5.031*	*- / 3.937*	*- / 2.755*	*- / 3.840*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**331.968**	**6.798**	**8.009**	**7.737**	**0.000**	**7.737**	**7.692**	**5.601**	**5.086**	**7.381**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2611 / Naval Tact Cmd Supt Sys (NTCSS)	**Modification Number / Title:** 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)

Manufacturer Information

Manufacturer Name: NIWC LANT | Manufacturer Location: Charleston, SC

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Nov 2018	Nov 2019	Nov 2020				
Delivery Dates	Jan 2019	Jan 2020	Jan 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	1,456 / 108.665	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1,456 / 108.665
FY 2019	- / -	49 / 2.799	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	49 / 2.799
FY 2020	- / -	- / -	72 / 3.705	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	72 / 3.705
FY 2021	- / -	- / -	- / -	80 / 4.759	0 / 0.000	80 / 4.759	- / -	- / -	- / -	- / -	0 / 0.000	80 / 4.759
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	85 / 5.031	- / -	- / -	- / -	0 / 0.000	85 / 5.031
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	68 / 3.937	- / -	- / -	0 / 0.000	68 / 3.937
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	32 / 2.755	- / -	0 / 0.000	32 / 2.755
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	44 / 3.840	0 / 0.000	44 / 3.840
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	1,456 / 108.665	49 / 2.799	72 / 3.705	80 / 4.759	0 / 0.000	80 / 4.759	85 / 5.031	68 / 3.937	32 / 2.755	44 / 3.840	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	1,456	-	16	16	17	-	24	24	24	-	26	27	27	-	28	28	29	-	22	23	23	-	10	11	11	-	14	15	15	Cont.	Cont.
Out	1,456	-	16	16	17	-	24	24	24	-	26	27	27	-	28	28	29	-	22	23	23	-	10	11	11	-	14	15	15	Cont.	Cont.

Footnotes:

(5) Quantity changes from year to year are driven by fact-of-life changes to ashore site availability schedules. The variance in unit cost between fiscal years is attributed to the composition of ashore site configurations (Non-VE versus large NAS/MALS fielding) that NTCSS will be procuring and installing in any given fiscal year.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205604N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	88.071	29.822	52.753	103.835	0.000	103.835	86.367	60.020	62.574	62.991	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	88.071	29.822	52.753	103.835	0.000	103.835	86.367	60.020	62.574	62.991	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**88.071**	**29.822**	**52.753**	**103.835**	**0.000**	**103.835**	**86.367**	**60.020**	**62.574**	**62.991**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.669	2.048	3.138	-	3.138	3.419	4.066	5.810	1.560	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Advanced Tactical Data Link Systems (ATDLS) funds the Time Division Multiple Access family of Link 16 terminals including the Multifunctional Information Distribution System - Low Volume Terminal (MIDS-LVT), Multifunctional Information Distribution System - Joint Tactical Radio System (MIDS_JTRS), Joint Tactical Information Distribution System (JTIDS) and the Tactical Digital Information Link - Joint (TADIL-J) message standard databases resident in the Command & Control Processor (C2P)/ Common Data Link Management System (CDLMS). ATDLS also funds the Command and Control Processor (C2P) Technology Refresh (TR), Next Generation (NG) C2P (NGC2P) upgrades to meet LHD combat system upgrades, Link-22 capability upgrades, Link 16 terminal upgrades and replacements, Link 16 antenna replacements, Link 16 MOS Terminal Controller Central Processing replacements, Link Monitoring Management Tool (LMMT), and other ATDLS integration.

Command and Control Processor (C2P) Terminal Technology Refresh Full Systems Ship/Shore (DR003): C2P computer processing boards are obsolete and have antiquated software code with no industrial base support. Technology Refresh is required to address system hardware obsolescence in order to maintain the C2P system operational availability requirement.

Link 16 Terminal Ship/Shore (DR012): All US Navy ships with legacy Multifunctional Information Distribution System on Ship (MOS) and Joint Tactical Information Distribution System (JTIDS) terminals will have Link 16 terminals replaced with modernized MOS (MOS Mod) terminals to address Crypto Modernization (CM) and Frequency Remapping (FR) mandates and enable the implementation of future enhancements incorporated into the MIDS Joint Tactical Radio System (MIDS-J) terminals. For those ships whose legacy JTIDS or MOS system will not be replaced with MOS Mod by FY2025 will have CM/FR product improvement kits installed into the terminal to meet the FR requirement. The overall product improvement effort will bring the Link 16 terminals in compliance with the Department of Defense / Department of Transportation Memorandum of Agreement (31DEC02) and updated National Security Agency approved cryptographic algorithms.

Link 16 Antenna Replacement (DR012): Existing obsolete dedicated Link 16 shipboard antenna will be replaced.

Link Monitoring Management Tool (LMMT) Ship/Shore (DR014): LMMT is required to enable Joint Interface Control Officers (JICOs) to effectively monitor and manage the performance of tactical data link networks. Funds procurement and installation of LMMT hardware on ships and shore sites. MIDS will also be procured and installed for CVNs.

Advanced Tactical Data Link Systems (ATDLS) Training (DR666): Develop end-to-end ATDLS operator training curriculum and simulator to support new capabilities.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205604N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Adv Tact Data Link Sys (ATDLS)	P-5a			- / 52.111	- / 6.800	- / 6.267	- / 5.567	- / 0.000	- / 5.567
P-3a	1 / Adv Tact Data Link Sys (ATDLS) (TBD)				- / 35.960	- / 23.022	- / 46.486	- / 98.268	- / 0.000	- / 98.268
P-40	**Total Gross/Weapon System Cost**				**- / 88.071**	**- / 29.822**	**- / 52.753**	**- / 103.835**	**- / 0.000**	**- / 103.835**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Adv Tact Data Link Sys (ATDLS)	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Adv Tact Data Link Sys (ATDLS) (TBD)				- / 78.431	- / 52.765	- / 55.252	- / 53.901	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 86.367**	**- / 60.020**	**- / 62.574**	**- / 62.991**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY2020 to FY2021 increase of $51.082 million is due to the following:

- Increase of $35.999 million due to the acceleration of Link 16 Crypto Modernization (CM) fielding across all US Navy ships in compliance with National Security Agency (NSA) milestone of CY2022. Increase provides for procurement of 70 additional systems above FY2021 quantities requested during FY 2020 President's Budget request. Ships not upgraded with the CM capability by the NSA mandated date will lose Link-16 capability.

- Increase of $2.6 million to support end-to-end training required to update existing training manuals and simulators. The annual operator throughput for the Tactical Data Coordinator course is over 360 students. Each program of record (Link 16, C2P and LMMT) is developing new capabilities. These training dollars are required to develop an integrated training product that will coincide with initial fielding of new capabilities starting in FY23.

- Remaining $12.483 million increase due to additional Link-16 installation costs and C2P Terminal Ship support costs in FY2021.

Advanced Tactical Data Link Systems (ATDLS) procure command and control equipment for both shipboard and shore units including Link 16 Network Program Crypto Modernization (CM) and Frequency Remapping (FR) Upgraded Terminals, Link 16 Network Program Antennas, Command and Control Processor (C2P) hardware and software, and Link Monitoring Management Tool (LMMT) hardware and software to address Air Defense System Integrator (ADSI) obsolesce issues.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Item Number / Title [DODIC]:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	52.111	6.800	6.267	5.567	0.000	5.567
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	52.111	6.800	6.267	5.567	0.000	5.567
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**52.111**	**6.800**	**6.267**	**5.567**	**0.000**	**5.567**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR003 C2P Cost																		
Recurring Cost																		
1.1.1) C2P - Terminal Shore (1)	982.125	8	7.857	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*7.857*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR003 C2P Cost	**-**	**-**	***7.857***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR012 LINK 16 Cost																		
Recurring Cost																		
2.1.1) Link 16 - Terminal Shore(†) (2)	74.000	1	0.074	-	-	0.000	154.000	3	0.462	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) Link 16 - Antenna(†) (3)	189.000	8	1.512	201.000	11	2.211	203.000	9	1.827	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*1.586*	-	-	*2.211*	-	-	*2.289*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR012 LINK 16 Cost	**-**	**-**	***1.586***	**-**	**-**	***2.211***	**-**	**-**	***2.289***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR014 LINK MONITORING MANAGEMENT TOOL (LMMT) Cost																		
Recurring Cost																		
3.1.1) LMMT - Ship(†) (4)	248.696	23	5.720	340.000	1	0.340	-	-	0.000	115.000	3	0.345	-	-	0.000	115.000	3	0.345
3.1.2) LMMT - Shore(†)	116.158	38	4.414	101.000	1	0.101	101.000	6	0.606	40.000	6	0.240	-	-	0.000	40.000	6	0.240

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)	Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Recurring Cost	-	-	*10.134*	-	-	*0.441*	-	-	*0.606*	-	-	*0.585*	-	-	*0.000*	-	-	*0.585*
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR014 LINK MONITORING MANAGEMENT TOOL (LMMT) Cost	**-**	**-**	***10.134***	**-**	**-**	***0.441***	**-**	**-**	***0.606***	**-**	**-**	***0.585***	**-**	**-**	***0.000***	**-**	**-**	***0.585***
Flyaway - INSTALLATION - DR776 NON-FMP Cost																		
Recurring Cost																		
4.1.1) C2P - Terminal Shore Install (5)	-	-	4.586	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.2) Link 16 - Terminal Shore Install (6)	-	-	0.210	-	-	0.000	-	-	0.000	-	-	0.153	-	-	0.000	-	-	0.153
4.1.3) LMMT - Shore Install	-	-	4.300	-	-	0.079	-	-	0.404	-	-	0.101	-	-	0.000	-	-	0.101
Subtotal: Recurring Cost	-	-	*9.096*	-	-	*0.079*	-	-	*0.404*	-	-	*0.254*	-	-	*0.000*	-	-	*0.254*
Subtotal: Flyaway - INSTALLATION - DR776 NON-FMP Cost	**-**	**-**	***9.096***	**-**	**-**	***0.079***	**-**	**-**	***0.404***	**-**	**-**	***0.254***	**-**	**-**	***0.000***	**-**	**-**	***0.254***
Flyaway - INSTALLATION - DR777 FMP Cost																		
Recurring Cost																		
5.1.1) Link 16 - Antenna Install (7)	-	-	1.189	-	-	0.410	-	-	1.760	-	-	1.338	-	-	0.000	-	-	1.338
5.1.2) Link 16 - Antenna DSA (8)	-	-	0.439	-	-	0.266	-	-	0.344	-	-	0.177	-	-	0.000	-	-	0.177
5.1.3) LMMT - Ship Install (9)	-	-	3.026	-	-	2.424	-	-	0.000	-	-	0.260	-	-	0.000	-	-	0.260
Subtotal: Recurring Cost	-	-	*4.654*	-	-	*3.100*	-	-	*2.104*	-	-	*1.775*	-	-	*0.000*	-	-	*1.775*
Subtotal: Flyaway - INSTALLATION - DR777 FMP Cost	**-**	**-**	***4.654***	**-**	**-**	***3.100***	**-**	**-**	***2.104***	**-**	**-**	***1.775***	**-**	**-**	***0.000***	**-**	**-**	***1.775***
Flyaway - DSA - DR777/776 Cost																		
Recurring Cost																		
6.1.1) LMMT Terminal Ship / Shore DSA	-	-	1.395	-	-	0.272	-	-	0.363	-	-	0.159	-	-	0.000	-	-	0.159
Subtotal: Recurring Cost	-	-	*1.395*	-	-	*0.272*	-	-	*0.363*	-	-	*0.159*	-	-	*0.000*	-	-	*0.159*
Subtotal: Flyaway - DSA - DR777/776 Cost	**-**	**-**	***1.395***	**-**	**-**	***0.272***	**-**	**-**	***0.363***	**-**	**-**	***0.159***	**-**	**-**	***0.000***	**-**	**-**	***0.159***
Flyaway - ATDLS Consolidated Prior Year Requirements Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)	Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Recurring Cost																		
7.1.1) ATDLS - Consolidated Prior Year Requirements	-	-	3.841	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*3.841*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - ATDLS Consolidated Prior Year Requirements Cost	**-**	**-**	***3.841***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - DR555 PRODUCTION SUPPORT Cost																		
8.1) Link 16 - Antenna Production Support	-	-	0.165	-	-	0.118	-	-	0.109	-	-	0.000	-	-	0.000	-	-	0.000
8.2) LMMT -Ship / Shore Production Support	-	-	0.744	-	-	0.579	-	-	0.392	-	-	0.194	-	-	0.000	-	-	0.194
Subtotal: Support - DR555 PRODUCTION SUPPORT Cost	**-**	**-**	***0.909***	**-**	**-**	***0.697***	**-**	**-**	***0.501***	**-**	**-**	***0.194***	**-**	**-**	***0.000***	**-**	**-**	***0.194***
Support - DR666 ATDLS Training Cost																		
9.1) ATDLS Training (10)	-	-	12.639	-	-	0.000	-	-	0.000	-	-	2.600	-	-	0.000	-	-	2.600
Subtotal: Support - DR666 ATDLS Training Cost	**-**	**-**	***12.639***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***2.600***	**-**	**-**	***0.000***	**-**	**-**	***2.600***
Gross/Weapon System Cost	**-**	**-**	**52.111**	**-**	**-**	**6.800**	**-**	**-**	**6.267**	**-**	**-**	**5.567**	**-**	**-**	**0.000**	**-**	**-**	**5.567**

Remarks:

BLI 2614 procures data link components (e.g. circuit cards, routers, antennas, shock mounts, etc.) to replace obsolete ones. There is integration and testing of these components lasting 6-9 months, which causes procurements to be installed in the following fiscal year.

Unit cost and installation cost varies by ship/site due to different configurations required for both shore and ship systems.

(†) indicates the presence of a P-5a

Footnotes:

(1) The FY20 ATDLS budget has consolidated many procurement and installation lines into single procurement or installation line management by ship and shore. "C2P Terminal Shore" replaces the name "C2P Technology Refresh Full System Shore".

(2) "Link 16 Terminal Shore" consolidates "Link 16 JTIDS Shore, Link 16 MOS Shore, Link 16 MOS MOD Shore".

(3) "Link 16 Antenna" consolidates "Link 16 ESB-4 Antennas" and "Link 16 Upgrade Antenna".

(4) "LMMT Ship" consolidates "LMMT Ship (CVN)" and "LMMT Ship (L Class)".

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Item Number / Title [DODIC]:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(5) "C2P Terminal Shore" replaces the name "C2P Technology Refresh Full System Shore".

(6) "Link 16 Terminal Shore" consolidates "Link 16 JTIDS Shore, Link 16 MOS Shore, Link 16 MOS MOD Shore".

(7) "Link 16 Antenna" consolidates "Link 16 ESB-4 Antennas" and "Link 16 Upgrade Antenna".

(8) "Production Support" and "DSA" consolidated into a single ship/shore line by product.

(9) "LMMT Ship" consolidates "LMMT Ship (CVN)" and "LMMT Ship (L Class)".

(10) ATDLS Training (DR666): Currently, each program of record (Link 16, C2P and LMMT) are developing new capability. These training dollars are required to develop an integrated end-to-end training product for all tactical data link (TDL) functionality including the simulation of TDL functions performed by other Programs of Record (shipboard combat systems, external communications, and shipboard networking components). Total ADTLS End-to-End training curriculum and simulator costs align with a multi-year development schedule. This is required to complete training manuals, simulation interconnectivity, and field a simulator required for end-to-end operator training to include: C2P, LMMT, Link 16 family of systems, and other POR that provide TDL functionality. Completion of the training materials coincides with initial fielding of these new capabilities and is required in order to conduct end user operator training once systems are operational starting in FY23.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)	Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) Link 16 - Terminal Shore		2020	TBD / TBD	C / TBD	NAVWAR	Jun 2020	Dec 2020	3	154.000	N	Jan 2020	
2.1.2) Link 16 - Antenna		2019	NIWC Pacific / San Diego	WR	NIWC	Jan 2019	Oct 2019	11	201.000	Y		Jun 2014
2.1.2) Link 16 - Antenna		2020	NIWC Pacific / San Diego	WR	NIWC	Jan 2020	Oct 2020	9	203.000	Y		Jun 2014
3.1.1) LMMT - Ship		2019	Venesco / Chantilly / Virginia	C / FFP	NAVWAR	Nov 2018	Feb 2019	1	340.000	Y		Oct 2017
3.1.1) LMMT - Ship		2021	Venesco / Chantilly / Virginia	C / FFP	NAVWAR	Nov 2020	Feb 2021	3	115.000	Y		Oct 2017
3.1.2) LMMT - Shore		2019	Venesco / Chantilly / Virginia	C / FFP	NAVWAR	Nov 2018	Feb 2019	1	101.000	Y		Apr 2017
3.1.2) LMMT - Shore		2020	Venesco / Chantilly / Virginia	C / FFP	NAVWAR	Nov 2019	Feb 2020	6	101.000	Y		Apr 2017
3.1.2) LMMT - Shore		2021	Venesco / Chantilly / Virginia	C / FFP	NAVWAR	Nov 2020	Feb 2021	6	40.000	Y		Apr 2017

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Modification Number / Title:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	35.960	23.022	46.486	98.268	0.000	98.268	78.431	52.765	55.252	53.901	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	35.960	23.022	46.486	98.268	0.000	98.268	78.431	52.765	55.252	53.901	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**35.960**	**23.022**	**46.486**	**98.268**	**0.000**	**98.268**	**78.431**	**52.765**	**55.252**	**53.901**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Command and Control Processor (C2P) Technology Refresh Full Systems Ship: C2P computer processing boards are obsolete and have antiquated software code with no industrial base support. Technology refresh is required for C2P software modernization. Additionally, C2P configuration is not shock qualified. Full Systems upgrades are required to achieve 901D shock certification.

"Unit cost and installation cost varies by ship/site due to different configurations required for both shore and ship systems."

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Modification Number / Title:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:** 0205604N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)												
B Kits												
Recurring												
1.1.1) Link 16 Terminal Ship - NonOrganic (11)	3 / 2.469	1 / 0.760	45 / 29.250	112 / 60.295	- / -	112 / 60.295	17 / 11.164	43 / 35.194	13 / 11.726	25 / 24.553	Continuing	Continuing
1.1.2) C2P Terminal Ship - NonOrganic (12)	22 / 22.468	7 / 6.692	9 / 6.750	10 / 4.626	- / -	10 / 4.626	15 / 10.120	8 / 2.646	6 / 2.024	17 / 6.918	Continuing	Continuing
Subtotal: Recurring	*- / 24.937*	*- / 7.452*	*- / 36.000*	*- / 64.921*	*- / -*	*- / 64.921*	*- / 21.284*	*- / 37.840*	*- / 13.750*	*- / 31.471*	*Continuing*	*Continuing*
Subtotal: Adv Tact Data Link Sys (ATDLS)	*25 / 24.937*	*8 / 7.452*	*54 / 36.000*	*122 / 64.921*	*- / -*	*122 / 64.921*	*32 / 21.284*	*51 / 37.840*	*19 / 13.750*	*42 / 31.471*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 24.937*	*- / 7.452*	*- / 36.000*	*- / 64.921*	*- / -*	*- / 64.921*	*- / 21.284*	*- / 37.840*	*- / 13.750*	*- / 31.471*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Link 16 Terminal Ship / Shore DSA (13)	- / 0.289	- / 1.137	- / 1.200	- / 2.929	- / 0.000	- / 2.929	- / 6.909	- / 1.274	- / 3.186	- / 1.514	Continuing	Continuing
2.2) Link 16 Terminal Ship / Shore Production Support (14)	- / 0.054	- / 1.594	- / 0.929	- / 8.112	- / 0.000	- / 8.112	- / 0.638	- / 2.124	- / 0.843	- / 1.636	Continuing	Continuing
2.3) C2P Terminal Ship / Shore DSA	- / 0.992	- / 1.589	- / 1.275	- / 1.754	- / 0.000	- / 1.754	- / 1.281	- / 0.618	- / 2.421	- / 3.245	Continuing	Continuing
2.4) C2P Terminal Ship / Shore Production Support	- / 0.858	- / 0.558	- / 0.402	- / 1.789	- / 0.000	- / 1.789	- / 1.417	- / 0.761	- / 1.267	- / 1.033	Continuing	Continuing
Subtotal: Support	*- / 2.193*	*- / 4.878*	*- / 3.806*	*- / 14.584*	*- / -*	*- / 14.584*	*- / 10.245*	*- / 4.777*	*- / 7.717*	*- / 7.428*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)	- / 8.830	- / 10.692	- / 6.680	- / 18.763	- / 0.000	- / 18.763	- / 46.902	- / 10.148	- / 33.785	- / 15.002	Continuing	Continuing
Subtotal: Installation	*- / 8.830*	*- / 10.692*	*- / 6.680*	*- / 18.763*	*- / -*	*- / 18.763*	*- / 46.902*	*- / 10.148*	*- / 33.785*	*- / 15.002*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**35.960**	**23.022**	**46.486**	**98.268**	**0.000**	**98.268**	**78.431**	**52.765**	**55.252**	**53.901**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Modification Number / Title:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)

Manufacturer Information

Manufacturer Name: Data Link Solutions
Manufacturer Location: Cedar Rapids, Iowa
Administrative Leadtime *(in Months)*: 4
Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019	Feb 2020	Feb 2021				
Delivery Dates	Feb 2020	Feb 2021	Feb 2022				

Manufacturer Name: TBD
Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 4
Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Sep 2019	Feb 2020	Feb 2021	Feb 2022	Feb 2023	Feb 2024	Feb 2025
Delivery Dates	Sep 2020	Feb 2021	Feb 2022	Feb 2023	Feb 2024	Feb 2025	Feb 2026

Manufacturer Name: TBD
Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 3
Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Jul 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates		Jul 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026

Installation Information

Method of Implementation: [none specified]:: Installation Name: Link 16 Terminal Ship

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	3 / 1.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.520
FY 2019	- / -	- / -	1 / 0.380	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.380
FY 2020	- / -	- / -	- / -	45 / 9.750	0 / 0.000	45 / 9.750	- / -	- / -	- / -	- / -	0 / 0.000	45 / 9.750
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	112 / 33.132	- / -	- / -	- / -	0 / 0.000	112 / 33.132
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 7.045	- / -	- / -	0 / 0.000	17 / 7.045
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	43 / 26.165	- / -	0 / 0.000	43 / 26.165
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 5.262	Continuing	Continuing
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 1.520	- / -	1 / 0.380	45 / 9.750	0 / 0.000	45 / 9.750	112 / 33.132	17 / 7.045	43 / 26.165	13 / 5.262	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Modification Number / Title:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)

Installation Information

Method of Implementation: [none specified]:: Installation Name: Link 16 Terminal Ship

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	3	-	-	-	-	-	-	1	-	-	-	22	23	-	-	56	56	-	-	8	9	-	-	21	22	-	-	6	7	Cont.	Cont.
Out	3	-	-	-	-	-	-	-	1	-	-	-	22	23	-	-	56	56	-	-	8	9	-	-	21	22	-	-	6	Cont.	Cont.

Method of Implementation: [none specified]:: Installation Name: C2P Terminal Ship

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	9 / 7.310	11 / 10.692	2 / 1.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	22 / 19.402
FY 2019	- / -	- / -	7 / 4.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 4.900
FY 2020	- / -	- / -	- / -	9 / 9.013	0 / 0.000	9 / 9.013	- / -	- / -	- / -	- / -	0 / 0.000	9 / 9.013
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	10 / 13.770	- / -	- / -	- / -	0 / 0.000	10 / 13.770
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 3.103	- / -	- / -	0 / 0.000	15 / 3.103
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 7.620	- / -	0 / 0.000	8 / 7.620
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 9.740	0 / 0.000	6 / 9.740
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	9 / 7.310	11 / 10.692	9 / 6.300	9 / 9.013	0 / 0.000	9 / 9.013	10 / 13.770	15 / 3.103	8 / 7.620	6 / 9.740	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	9	-	-	4	7	-	2	3	4	-	-	5	4	-	-	5	5	-	-	7	8	-	-	4	4	-	-	3	3	Cont.	Cont.
Out	6	3	-	-	4	7	-	2	3	4	-	-	5	4	-	-	5	5	-	-	7	8	-	-	4	4	-	-	3	Cont.	Cont.

Footnotes:

(11) The FY20 ATDLS budget has consolidated many procurement and installation lines into single line management by ship and shore. "Link 16 Terminal Ship" consolidates all lines from called "Link 16 JTIDS Ship, Link 16 MOS ship, Link 16 MOS MOD ship, Link 16 MOS terminal controllers (TC)." The average unit cost fluctuation is primarily attributed to variance in system configuration requirements for each Link 16 platform type.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2614 / Adv Tact Data Link Sys (ATDLS)	**Modification Number / Title:** 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(12) "C2P Terminal Ship" consolidates "C2P Technology Refresh Full System Ship" and "C2P LHD Upgrades". The average procurement and installation unit cost fluctuation is primarily attributed to variance in system configuration requirements for each Link 16 platform type.

(13) "Production Support" and "DSA" consolidated into a single ship/shore line by product.

(14) Increase in Link 16 Terminal Ship/Shore production support is due to MOS MOD test equipment as required in the first year of the MOS MOD production contract.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2618 / Navy Command and Control System (NCCS)

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	54.118	3.769	3.390	3.594	0.000	3.594	3.702	3.792	3.842	3.916	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	54.118	3.769	3.390	3.594	0.000	3.594	3.702	3.792	3.842	3.916	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**54.118**	**3.769**	**3.390**	**3.594**	**0.000**	**3.594**	**3.702**	**3.792**	**3.842**	**3.916**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.187	0.053	0.016	-	0.016	0.012	0.023	0.027	-	-	0.318
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding includes Global Command and Control System-Maritime (GCCS-M), the Navy fielded portions of GCCS-Joint, and Joint Automated Deep Operations Coordination System (JADOCS). GCCS-M is further delineated by Afloat and Ashore.

GCCS-M is the Maritime implementation of the United States (U.S.) Global Command and Control System (GCCS). It provides Maritime Commanders at all echelons of command with a single, integrated, scalable Command, Control, Communication, Computers and Intelligence (C4I) system that fuses, correlates, filters, maintains and displays location, and attribute information on friendly, hostile and neutral land, sea and air forces. It takes this information and integrates it with available intelligence and environmental information to support commander decision making. It operates in near real-time, constantly updating unit positions and other situational awareness data. GCCS-M also records data in appropriate databases and maintains a history of changes to those records. System operators use the data to construct relevant tactical pictures using maps, charts, topography overlays, oceanographic overlays, meteorological overlays, imagery and all-source intelligence information coordinated into a Common Operational Picture (COP) that can be shared locally and with other sites. GCCS-M is not a weapon system, but receives data from, and interfaces with Navy integrated weapons systems. Navy Commanders review and evaluate the general tactical situation, plan actions and operations, direct forces, synchronize tactical movements, and integrate force maneuver with firepower. GCCS-M operates on General Service (GENSER) Secret networks in a variety of environments and supports joint, coalition and allied forces. GCCS-M is implemented Afloat and at Ashore fixed command centers. Increment 1 includes all GCCS-M software versions 4.0 and earlier. Increment 2 is GCCS-M 4.1.

[P5 / FA010 GCCS-M Afloat]: GCCS-M Afloat provides Command and Control capability to Force Level Ships (e.g. CVN Carriers, LCC Command Ships, LHA and LHD Amphibious Ships), Unit Level Ships (e.g. CG Cruisers, DDG Destroyers, MCM Mine Countermeasure Ships, LPD and LSD Amphibious Ships, FF/LCS Littoral Combat Ships, PC Coastal Patrol Ships), Submarines (e.g. SSN/SSBN/SSGN Submarines), the Software Support Activity (SSA), and the In-Service Engineering Activity (ISEA).

[P5 / FA020 GCCS-M Ashore]: GCCS-M Ashore provides evolutionary systems and ancillary equipment upgrades to support Fleet Commanders, Force Anti-Submarine Warfare Commanders, Submarine Operating Authorities, Aegis Ashore Missile Defense Systems, and Technical Training Equipment Sites worldwide. GCCS-M Ashore provides systems that receive, process, display, maintain and/or assess unit characteristics, employment scheduling, material condition, combat readiness, war fighting capabilities, and positional information of own, allied, and hostile forces. GCCS-M Ashore provides the tools necessary for fleet and Shore based Commanders to execute plans, transmit tasking, and provide tactical information to subordinate forces.

[P5 / FA040 GCCS (Joint) Support Equipment]: Global Command and Control System- Joint (GCCS-J) is a Department of Defense (DoD) Program of Record managed by the Defense Information Systems Agency (DISA) GCCS-J Program Management Office (PMO). The GCCS-J system requirements, software release schedule, and system fielding plan are determined by the DISA GCCS-J PMO in coordination

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2618 / Navy Command and Control System (NCCS)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

with the Joint Staff. GCCS-J supports the Joint Staff and Combatant Commanders by providing Command, Control, Communication, Computers and Intelligence (C4I) data processing capabilities, including status of forces and support requirements for use in national security decision making, force preparation and operational planning and execution. Global Command and Control System- Joint (GCCS-J) provides support for Fleet Communications Center interfacing with deployed units and other fixed Fleet and Joint Command Centers.

[P5 / FA060 Joint Automated Deep Operations Coordination System (JADOCS)]: Provide funding for the Navy fielding of JADOCS software on new installation hardware. JADOCS is required to provide the capability to coordinate joint targeting and mission assignment for time sensitive targets and other rapid-response missions across Functional Component Commanders, Joint and Combined Force Commanders, Geographic Combatant Commanders, and Special Operations Commanders.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2618 / Navy Command and Control System (NCCS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Navy Command and Control System (NCCS)	P-5a			- / 54.118	- / 3.769	- / 3.390	- / 3.594	- / 0.000	- / 3.594
P-40	**Total Gross/Weapon System Cost**				**- / 54.118**	**- / 3.769**	**- / 3.390**	**- / 3.594**	**- / 0.000**	**- / 3.594**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY 2021 budget procures and installs Global Command and Control System - Joint (GCCS-J) Ashore workstations, servers, Local Area Network (LAN) hardware and software, communications equipment, and Joint Automated Deep Operations Coordination System (JADOCS), and Global Command and Control System - Maritime (GCCS-M) software.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2618 / Navy Command and Control System (NCCS)	**Item Number / Title [DODIC]:** 1 / Navy Command and Control System (NCCS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	54.118	3.769	3.390	3.594	0.000	3.594
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	54.118	3.769	3.390	3.594	0.000	3.594
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**54.118**	**3.769**	**3.390**	**3.594**	**0.000**	**3.594**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	0.187	0.053	0.016	-	0.016
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - FA010 GCCS-M Afloat Cost																		
Recurring Cost																		
1.1.1) GCCS-M Increment 2 Afloat(†) (1)	14.886	228	3.394	4.026	39	0.157	2.793	29	0.081	6.893	28	0.193	-	-	-	6.893	28	0.193
Subtotal: Recurring Cost	-	-	*3.394*	-	-	*0.157*	-	-	*0.081*	-	-	*0.193*	-	-	-	-	-	*0.193*
Subtotal: Flyaway - FA010 GCCS-M Afloat Cost	**-**	**-**	***3.394***	**-**	**-**	***0.157***	**-**	**-**	***0.081***	**-**	**-**	***0.193***	**-**	**-**	**-**	**-**	**-**	***0.193***
Flyaway - FA020 GCCS-M Ashore Cost																		
Recurring Cost																		
2.1.1) GCCS-M Increment 2 Ashore(†) (2)	479.667	6	2.878	-	-	-	1.000	2	0.002	7.500	2	0.015	-	-	-	7.500	2	0.015
Subtotal: Recurring Cost	-	-	*2.878*	-	-	-	-	-	*0.002*	-	-	*0.015*	-	-	-	-	-	*0.015*
Subtotal: Flyaway - FA020 GCCS-M Ashore Cost	**-**	**-**	***2.878***	**-**	**-**	**-**	**-**	**-**	***0.002***	**-**	**-**	***0.015***	**-**	**-**	**-**	**-**	**-**	***0.015***
Flyaway - FA040 GCCS (Joint) Support Equipment Cost																		
Recurring Cost																		
3.1.1) GCCS (Joint) Support Equipment(†)	145.132	53	7.692	87.167	6	0.523	85.667	6	0.514	88.000	6	0.528	-	-	-	88.000	6	0.528
Subtotal: Recurring Cost	-	-	*7.692*	-	-	*0.523*	-	-	*0.514*	-	-	*0.528*	-	-	-	-	-	*0.528*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)	Item Number / Title [DODIC]: 1 / Navy Command and Control System (NCCS)
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Flyaway - FA040 GCCS (Joint) Support Equipment Cost	**-**	**-**	***7.692***	**-**	**-**	***0.523***	**-**	**-**	***0.514***	**-**	**-**	***0.528***	**-**	**-**	**-**	**-**	**-**	***0.528***
Flyaway - FA060 Joint Automated Deep Operations Coordination System (JADOCS) Cost																		
Recurring Cost																		
4.1.1) JADOCS(†) (3)	9.818	33	0.324	13.200	5	0.066	10.333	3	0.031	1.000	4	0.004	-	-	-	1.000	4	0.004
Subtotal: Recurring Cost	-	-	*0.324*	-	-	*0.066*	-	-	*0.031*	-	-	*0.004*	-	-	-	-	-	*0.004*
Subtotal: Flyaway - FA060 Joint Automated Deep Operations Coordination System (JADOCS) Cost	**-**	**-**	***0.324***	**-**	**-**	***0.066***	**-**	**-**	***0.031***	**-**	**-**	***0.004***	**-**	**-**	**-**	**-**	**-**	***0.004***
Flyaway - ASHORE INSTALLATIONS - FA776 Non FMP Cost																		
Recurring Cost																		
5.1.1) GCCS-M Increment 2 Ashore Installation and Pre-Installation Design	-	-	1.567	-	-	-	-	-	0.138	-	-	0.114	-	-	-	-	-	0.114
5.1.2) GCCS (Joint) Support Equipment	-	-	4.586	-	-	0.450	-	-	0.475	-	-	0.478	-	-	-	-	-	0.478
5.1.3) GCCS-J Pre-Installation Design	-	-	1.432	-	-	0.180	-	-	0.159	-	-	0.161	-	-	-	-	-	0.161
Subtotal: Recurring Cost	-	-	*7.585*	-	-	*0.630*	-	-	*0.772*	-	-	*0.753*	-	-	-	-	-	*0.753*
Subtotal: Flyaway - ASHORE INSTALLATIONS - FA776 Non FMP Cost	**-**	**-**	***7.585***	**-**	**-**	***0.630***	**-**	**-**	***0.772***	**-**	**-**	***0.753***	**-**	**-**	**-**	**-**	**-**	***0.753***
Flyaway - AFLOAT INSTALLATIONS - FA777 FMP Cost																		
Recurring Cost																		
6.1.1) GCCS-M Increment 2 Afloat	-	-	17.223	-	-	2.345	-	-	1.926	-	-	1.995	-	-	-	-	-	1.995
6.1.2) JADOCS	-	-	0.452	-	-	0.030	-	-	0.049	-	-	0.082	-	-	-	-	-	0.082
Subtotal: Recurring Cost	-	-	*17.675*	-	-	*2.375*	-	-	*1.975*	-	-	*2.077*	-	-	-	-	-	*2.077*
Subtotal: Flyaway - AFLOAT INSTALLATIONS - FA777 FMP Cost	**-**	**-**	***17.675***	**-**	**-**	***2.375***	**-**	**-**	***1.975***	**-**	**-**	***2.077***	**-**	**-**	**-**	**-**	**-**	***2.077***
Flyaway - Consolidated Prior Year Requirements Cost																		
Recurring Cost																		
7.1.1) Consolidated Prior Year Requirements (4)	-	-	14.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2618 / Navy Command and Control System (NCCS)	**Item Number / Title [DODIC]:** 1 / Navy Command and Control System (NCCS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Recurring Cost	-	-	*14.338*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost	**-**	**-**	***14.338***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - FA555 Production Support Cost																		
8.1) GCCS (Joint) Production Engineering Support	-	-	0.232	-	-	0.018	-	-	0.015	-	-	0.024	-	-	-	-	-	0.024
Subtotal: Support - FA555 Production Support Cost	**-**	**-**	***0.232***	**-**	**-**	***0.018***	**-**	**-**	***0.015***	**-**	**-**	***0.024***	**-**	**-**	**-**	**-**	**-**	***0.024***
Gross/Weapon System Cost	**-**	**-**	**54.118**	**-**	**-**	**3.769**	**-**	**-**	**3.390**	**-**	**-**	**3.594**	**-**	**-**	**0.000**	**-**	**-**	**3.594**

Remarks:

- Global Command and Control System - Maritime (GCCS-M) Afloat install quantities also include tech refresh units.
- For GCCS-M software-only installations, Other Procurement, Navy (OPN) is the appropriate fund source when the GCCS-M installation is an incidental cost to the Common Computing Environment (CCE)/ Consolidated Afloat Networks and Enterprise Services (CANES) hardware installation.
- GCCS-M unit costs are based on the average cost of all the platforms or sites installed within a given fiscal year. Unit cost variances are due to the diverse types of upgrade requirements per platform or site.
- Global Command and Control System - Joint (GCCS-J) quantities represent the number of complete unit upgrades to existing systems. The cost to upgrade each unit varies based on the number of servers, computers, and monitors and the equipment configurations. The different unit sizes and configurations result in varying unit costs.

(†) indicates the presence of a P-5a

Footnotes:

(1) GCCS-M Afloat FY21 unit cost increases from FY20 due to increased Commercial Off-the-Shelf (COTS) software requirements for the latest GCCS-M Group Level v4.1.2.1 software variant.

(2) GCCS-M Ashore FY20 unit cost of $1K represents a software-only cost (installed along with new CANES hardware), whereas the FY21 unit cost of $7.5K represents the average cost of hardware/software procured for Aegis Ashore sites.

(3) JADOCS FY20 unit cost represents the average of hardware/software procured, whereas the FY21 unit cost represents a software-only cost (installed along with new CANES hardware).

(4) Consolidated prior year requirements include GCCS-M Increment 1 Afloat (FA010/FA777), GCCS-M Increment 2 Ashore Training Curriculum (FA666), GCCS-M Increment 2 Ashore Production Support (FA555), JADOCS Ashore Installations (FA776).

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)	Item Number / Title [DODIC]: 1 / Navy Command and Control System (NCCS)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) GCCS-M Increment 2 Afloat		2019	NIWC Atlantic/Pacific (5) / NAVWAR	WR	NAVWAR	Nov 2018	Jan 2019	39	4.026	Y		
1.1.1) GCCS-M Increment 2 Afloat		2020	NIWC Atlantic/Pacific (5) / NAVWAR	WR	NAVWAR	Nov 2019	Jan 2020	29	2.793	Y		
1.1.1) GCCS-M Increment 2 Afloat		2021	NIWC Atlantic/Pacific (5) / NAVWAR	WR	NAVWAR	Nov 2020	Jan 2021	28	6.893	Y		
2.1.1) GCCS-M Increment 2 Ashore		2020	NIWC Atlantic/Pacific / NAVWAR	WR	NAVWAR	Nov 2019	Jan 2020	2	1.000	Y		
2.1.1) GCCS-M Increment 2 Ashore		2021	NIWC Atlantic/Pacific / NAVWAR	WR	NAVWAR	Nov 2020	Jan 2021	2	7.500	Y		
3.1.1) GCCS (Joint) Support Equipment		2019	NIWC Atlantic/NAVWAR / NAVWAR	WR	NAVWAR	Jan 2019	Apr 2019	6	87.167	Y		
3.1.1) GCCS (Joint) Support Equipment		2020	NIWC Atlantic/NAVWAR / NAVWAR	WR	NAVWAR	Jan 2020	Apr 2020	6	85.667	Y		
3.1.1) GCCS (Joint) Support Equipment		2021	NIWC Atlantic/NAVWAR / NAVWAR	WR	NAVWAR	Jan 2021	Apr 2021	6	88.000	Y		
4.1.1) JADOCS		2019	NIWC Pacific / San Diego, CA	WR	NAVWAR	Nov 2018	Jan 2019	5	13.200	Y		
4.1.1) JADOCS		2020	NIWC Pacific / San Diego, CA	WR	NAVWAR	Nov 2019	Jan 2020	3	10.333	Y		
4.1.1) JADOCS		2021	NIWC Pacific / San Diego, CA	WR	NAVWAR	Nov 2020	Jan 2021	4	1.000	Y		

Footnotes:

(5) For GCCS-M Increment 1 Afloat, Increment 2 Afloat, and Increment 2 Ashore: Naval Information Warfare Centers (NIWC), Pacific and Atlantic are procuring, integrating and installation agents. There are multiple hardware and software contracts awarded under each of these cost elements.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603502N, 0604127N, 0604028N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	339.922	32.367	19.448	15.744	0.000	15.744	16.301	16.811	17.020	17.345	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	339.922	32.367	19.448	15.744	0.000	15.744	16.301	16.811	17.020	17.345	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**339.922**	**32.367**	**19.448**	**15.744**	**0.000**	**15.744**	**16.301**	**16.811**	**17.020**	**17.345**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	0.592	-	-	-	-	-	-	-	-	0.592
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides systems, subsystems, and engineering change kits for minehunting, navigation, and tactical display operations by the surface Mine Countermeasure (MCM) force. Engineering change kits improve reliability and maintainability and correct deficiencies to allow equipment to perform in accordance with operational requirements.

HME Ship Systems support software integration and hardware upgrades to legacy MCM ships and software tech refresh for the Integrated Ship Control System (ISCS) on MCM Class Ships forward deployed to ensure MCM mine hunting and minesweeping capability whereas legacy sustainment is not feasible and would result in delays and obsolescence. This program also supports ship change, upgrades computer workstations, replaces network switches, and replaces the operating system. HME Systems modernization program ends in FY19.

The MCM Combat System upgrades program consists of a series of incremental upgrades to the current combat system via Engineering Change proposals. The upgrades improve reliability and correct deficiencies to ensure the equipment performs in accordance with operational requirements. This includes supportability and obsolescence Upgrade Engineering Changes of the MCM-1 Class Ship combat systems to resolve issues with the AN/SLQ-48 Mine Neutralization System, installation of Mine Warfare and Environmental Decision Aids Library (MEDAL) Enterprise Architecture (EA)Expeditionary Systems, and improved SSQ-94 System Trainer to MCM Ships' and integration of the SQQ-32 High Frequency Wide Band (HFWB) and PINS upgrades to resolve obsolescence.

The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) program procures Unmanned Undersea Vehicles to support clandestine mine detection capability against volume and bottom mines including buried mine detection. The Knifefish system is composed of two UUVs, batteries, launch and handling system, and other support equipment. Beginning in FY20, this program realigned to OPN 1611 Small and Medium UUVs.

Magnetic Silencing Facility Upgrades support hardware, auxiliary systems, and support in association with the upgrade of the current aging CONUS and Outside Continental United States (OCONUS) Magnetic Silencing Facilities so the calibration of the new Open-Loop Magnetic Systems or Advanced Degaussing System ships and submarines can be accomplished for worldwide operation. The upgrade will also ensure the ships and submarines will meet OPNAV Instruction 8950.2G for Electromagnetic Signature Requirements and will be less susceptible to Electro-Magnetic threat systems.

MCM EO/IR Sensors - FY19 Congressional Add (Cost Code LV090) to procure and install additional electro-optical infrared surveillance sensors (EO/IR) on forward deployed minesweepers. These advanced systems will provide situational awareness for ships continually relied upon to perform critical missions while conducting patrols.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0603502N, 0604127N, 0604028N	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / HME SHIP SYSTEMS				- / 20.627	- / 2.132	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	2 / MINE COUNTERMEASURES				- / 177.469	- / 2.931	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	3 / UNMANNED SYSTEMS [UNMAN]	P-5a, P-21			- / 31.010	- / 15.033	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	4 / MAGNETIC SILENCING FACILITY UPGRADES				- / 110.816	- / 7.271	- / 19.448	- / 15.744	- / 0.000	- / 15.744
P-5	5 / MCM EO / IR SENSORS				- / 0.000	- / 5.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 339.922**	**- / 32.367**	**- / 19.448**	**- / 15.744**	**- / 0.000**	**- / 15.744**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY21 (Cost Code LV085) funds the Magnetic Silencing Facility treatment facility in Norfolk, VA, upgrading obsolete high power equipment to provide the necessary magnetic field for ensuring current and future navy vessels meet OPNAV Instruction S8950.2H for Electromagnetic Signature Requirements.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 1 / HME SHIP SYSTEMS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	20.627	2.132	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	20.627	2.132	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**20.627**	**2.132**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Software - LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM Cost																		
Recurring Cost																		
1.1.1) SOFTWARE INTEGRATION	-	-	20.627	-	-	2.132	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*20.627*	-	-	*2.132*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Software - LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM Cost	**-**	**-**	***20.627***	**-**	**-**	***2.132***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**20.627**	**-**	**-**	**2.132**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 2 / MINE COUNTERMEASURES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	177.469	2.931	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	177.469	2.931	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**177.469**	**2.931**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - LV075 - MCM COMBAT SYSTEMS Cost																		
Recurring Cost																		
1.1.1) SSQ-94 Trainer	-	-	2.998	-	-	0.422	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) MCM Combat Systems (MEDAL)	-	-	165.472	-	-	1.021	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) Obsolescence Upgrades (SLQ-48)	-	-	8.999	-	-	1.488	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*177.469*	-	-	*2.931*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - LV075 - MCM COMBAT SYSTEMS Cost	**-**	**-**	***177.469***	**-**	**-**	***2.931***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**177.469**	**-**	**-**	**2.931**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 3 / UNMANNED SYSTEMS [UNMAN]
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	31.010	15.033	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	31.010	15.033	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**31.010**	**15.033**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - LV079 - SMCM UUV W/LFBB (Knifefish) Cost																		
Recurring Cost																		
1.1.1) SMCM UUV (Knifefish)(†) (1)	12,873.000	2	25.746	10,765.000	1	10.765	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*25.746*	-	-	*10.765*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Non Recurring Cost																		
1.2.1) Ancillary Equipment	-	-	1.258	-	-	2.795	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.2.2) Production Engineering - Knifefish	-	-	0.996	-	-	1.473	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*2.254*	-	-	*4.268*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - LV079 - SMCM UUV W/LFBB (Knifefish) Cost	**-**	**-**	***28.000***	**-**	**-**	***15.033***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers Cost																		
Recurring Cost																		
2.1.1) UISS Training Equipment(†)	1,505.000	2	3.010	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*3.010*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers Cost	**-**	**-**	***3.010***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement	Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Gross/Weapon System Cost	-	-	31.010	-	-	15.033	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Remarks:
[Hardware] Beginning in FY20, this program realigned to OPN 1611 Small and Medium UUVs.

(†) indicates the presence of a P-5a

Footnotes:
(1) The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) program procures Unmanned Undersea Vehicles to support clandestine mine detection capability against volume and bottom mines, including buried mine detection. The Knifefish system is composed of two UUVs, batteries, launch and handling system, and other support equipment.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement	Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) SMCM UUV (Knifefish)(†)		2018	General Dynamics MS / Mcleansville, NC	C / FPIF	NAVSEA	Aug 2019	Feb 2021	2	12,873.000	N	Mar 2019	
1.1.1) SMCM UUV (Knifefish)(†)		2019	General Dynamics MS / Mcleansville, NC	C / CPIF	NAVSEA	Aug 2019	Feb 2021	1	10,765.000	N	Mar 2019	
2.1.1) UISS Training Equipment		2018	Textron / Hunt Valley, MD	C / FPIF	NAVSEA	Sep 2019	Mar 2021	2	1,505.000	N	Apr 2019	

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 3 / UNMANNED SYSTEMS [UNMAN]

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) SMCM UUV (Knifefish) (1)																															
	1	2018	NAVY	2	0	2											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	1	2019	NAVY	1	0	1											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 3 / UNMANNED SYSTEMS [UNMAN]

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) SMCM UUV (Knifefish) [1]																															
	1	2018	NAVY	2	0	2	-	-	-	-	1	1																			0
	1	2019	NAVY	1	0	1	-	-	-	-	1																				0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 3 / UNMANNED SYSTEMS [UNMAN]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	General Dynamics MS - Mcleansville, NC	1	6	10	3	6	18	24	0	3	18	21

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 4 / MAGNETIC SILENCING FACILITY UPGRADES
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	110.816	7.271	19.448	15.744	0.000	15.744
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	110.816	7.271	19.448	15.744	0.000	15.744
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**110.816**	**7.271**	**19.448**	**15.744**	**0.000**	**15.744**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - LV085 - MAGNETIC SILENCING FACILITY UPGRADES Cost																		
Recurring Cost																		
1.1.1) MSF MEASUREMENT SYSTEM UPGRADE	110,816.000	1	110.816	-	-	7.271	-	-	19.448	-	-	15.744	-	-	0.000	-	-	15.744
Subtotal: Recurring Cost	-	-	*110.816*	-	-	*7.271*	-	-	*19.448*	-	-	*15.744*	-	-	*0.000*	-	-	*15.744*
Subtotal: Hardware - LV085 - MAGNETIC SILENCING FACILITY UPGRADES Cost	**-**	**-**	***110.816***	**-**	**-**	***7.271***	**-**	**-**	***19.448***	**-**	**-**	***15.744***	**-**	**-**	***0.000***	**-**	**-**	***15.744***
Gross/Weapon System Cost	**-**	**-**	**110.816**	**-**	**-**	**7.271**	**-**	**-**	**19.448**	**-**	**-**	**15.744**	**-**	**-**	**0.000**	**-**	**-**	**15.744**

Remarks:
FY21 (Cost Code LV085) funds the Magnetic Silencing Facility treatment facility in Norfolk, VA, upgrading obsolete high power equipment to provide the necessary magnetic field for ensuring current and future navy vessels meet OPNAV Instruction S8950.2H for Electromagnetic Signature Requirements.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2622 / Minesweeping System Replacement	**Item Number / Title [DODIC]:** 5 / MCM EO / IR SENSORS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	5.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	5.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**5.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - MCM EO / IR SENSORS Cost																		
Recurring Cost																		
1.1.1) MCM EO / IR SENSORS	-	-	0.000	-	-	5.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*5.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - MCM EO / IR SENSORS Cost	**-**	**-**	***0.000***	**-**	**-**	***5.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**-**	**-**	**5.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Remarks:
[Hardware] MCM EO/IR Sensors - FY19 Congressional Add (Cost Code LV090) to procure and install additional electro-optical infrared surveillance sensors (EO/IR) on forward deployed minesweepers. These advanced systems will provide situational awareness for ships continually relied upon to perform critical missions while conducting patrols.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	66.144	8.616	8.730	5.493	0.000	5.493	5.708	5.840	5.919	6.035	-	112.485
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	66.144	8.616	8.730	5.493	0.000	5.493	5.708	5.840	5.919	6.035	-	112.485
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**66.144**	**8.616**	**8.730**	**5.493**	**0.000**	**5.493**	**5.708**	**5.840**	**5.919**	**6.035**	**-**	**112.485**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	0.380	0.369	-	0.369	0.384	0.393	0.399	0.391	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides a combination of US Navy projects planned to counter the threat to amphibious landing forces from known and projected foreign land/sea mines, obstacles in the Beach Zone (BZ) and Surf Zone (SZ) approaches to amphibious assault areas. It is a system of systems (Countermine/Counter Obstacle, Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T), Navigation/Virtual Marking/ Integration, C4I/Data Fusion) that provides a full assault breaching capability. This program is an essential element to the Marine Corps Ship To Objective Maneuver Concept of Operations.

[P5 / SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)]: The mission of the AN/DVS-1 COBRA is to conduct unmanned aerial tactical reconnaissance in the littoral battlespace for detection and localization of minefields and obstacles in the surf zone and beach zone prior to an amphibious assault. The COBRA airborne payload is carried on the MQ-8 Fire Scout Vertical Takeoff and Landing Unmanned Aerial Vehicle
(VTUAV). This allows operators and other personnel to remain at a safe distance from the mine and obstacle belts as well as enemy direct and indirect fire. COBRA will be embarked in the Littoral Combat Ship (LCS) as part of the
Mine Countermeasures (MCM) Mission Package (MP).

COBRA provides the ISR/T part of the Assault Breaching System (ABS) of systems. One system consists of two COBRA Airborne Payload Subsystem (CAPS) and one Post Mission Analysis (PMA) station. Block I introduced a
daytime detection capability for surface laid minefields and obstacles in the Beach Zone. Additional capabilities to include a daytime surf zone, very shallow water and shallow water detection capability will be introduced via
engineering changes through FY24. COBRA has a modular payload architecture, is integrated with the MQ-8 Fire Scout VTUAV and other vessels of opportunity, and in its expeditionary configuration from the shore. COBRA
serves as a Coastal Mine Reconnaissance (CMR) sensor within the LCS MCM MP as part of amphibious assault breaching mission.

The OPN 2624 procurement line supports the COBRA program of record, delivering COBRA systems to Navy helicopter wings to provide initial proficiency training to Navy aircrews. The OPN 1601 procurement line supports the systems that provide the deployable combat capability to LCS mission packages.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM

ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Shallow Water Mine CM Ship	P-5a, P-21			- / 66.144	- / 8.616	- / 8.730	- / 5.493	- / 0.000	- / 5.493
P-40	**Total Gross/Weapon System Cost**				**- / 66.144**	**- / 8.616**	**- / 8.730**	**- / 5.493**	**- / 0.000**	**- / 5.493**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY 2021 funding supports engineering updates for system maintenance (e.g. Cybersecurity), obsolescence mitigation of CAPS/PMA subsystem components and expected system enhancements to improve the probability of
detection, reduce false alarms and improve searching Concept of Operations in the BZ. Additional capabilities to include a daytime a surf zone, very shallow water and shallow water detection capability will be introduced via engineering changes through FY24.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM	**Item Number / Title [DODIC]:** 1 / Shallow Water Mine CM Ship
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	66.144	8.616	8.730	5.493	0.000	5.493
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	66.144	8.616	8.730	5.493	0.000	5.493
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**66.144**	**8.616**	**8.730**	**5.493**	**0.000**	**5.493**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	0.380	0.369	-	0.369
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - SW003: LANDING CRAFT UTILITY (LCU) NAVIGATION UPGRADE Cost																		
Recurring Cost																		
1.1.1) LCU NAVIGATION UPGRADES	-	-	1.479	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*1.479*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - SW003: LANDING CRAFT UTILITY (LCU) NAVIGATION UPGRADE Cost	**-**	**-**	***1.479***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA) Cost																		
Recurring Cost																		
2.1.1) SW0041 COBRA BLOCK 1(†)	10,959K	3	32.876	8,550K	1	8.550	8,550K	1	8.550	-	-	-	-	-	-	-	-	-
2.1.2) SW00411 COBRA BLOCK 1 SPARES, TRAINING	-	-	2.164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.3) SW00411 COBRA BLOCK 1 MOD UPGRADES	-	-	19.947	-	-	0.066	-	-	0.180	-	-	5.493	-	-	-	-	-	5.493
Subtotal: Recurring Cost	-	-	*54.987*	-	-	*8.616*	-	-	*8.730*	-	-	*5.493*	-	-	-	-	-	*5.493*
Subtotal: Hardware - SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA) Cost	**-**	**-**	***54.987***	**-**	**-**	***8.616***	**-**	**-**	***8.730***	**-**	**-**	***5.493***	**-**	**-**	**-**	**-**	**-**	***5.493***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2624 / Shallow Water MCM	Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - SW005: AMPHIBIOUS ASSAULT VEHICLE NAVIGATION UPGRADE Cost																		
Recurring Cost																		
3.1.1) AMPHIBIOUS ASSAULT VEHICLE NAVIGATION UPGRADE	-	-	6.359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*6.359*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - SW005: AMPHIBIOUS ASSAULT VEHICLE NAVIGATION UPGRADE Cost	**-**	**-**	***6.359***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - SW061: LANDING CRAFT AIR CUSHION (LCAC) AUTOPILOT UPGRADE Cost																		
Recurring Cost																		
4.1.1) LCAC AUTOPILOT UPGRADES	-	-	2.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*2.286*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - SW061: LANDING CRAFT AIR CUSHION (LCAC) AUTOPILOT UPGRADE Cost	**-**	**-**	***2.286***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support - SW830: PRODUCTION ENGINEERING Cost																		
5.1) PRODUCTION ENGINEERING	-	-	1.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - SW830: PRODUCTION ENGINEERING Cost	**-**	**-**	***1.033***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**-**	**-**	**66.144**	**-**	**-**	**8.616**	**-**	**-**	**8.730**	**-**	**-**	**5.493**	**-**	**-**	**0.000**	**-**	**-**	**5.493**

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2624 / Shallow Water MCM	Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) SW0041 COBRA BLOCK 1(†)		2018	ARETE / TUCSON, AZ	C / FFP	NSWC PC	Sep 2018	Sep 2020	1	8,550K	Y		
2.1.1) SW0041 COBRA BLOCK 1(†)		2019	ARETE / TUCSON, AZ	C / FFP	NSWC PC	Dec 2018	Dec 2020	1	8,550K	Y		
2.1.1) SW0041 COBRA BLOCK 1(†)		2020	ARETE / TUCSON, AZ	C / FFP	NSWC PC	Oct 2019	Oct 2021	1	8,550K	Y		

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM	**Item Number / Title [DODIC]:** 1 / Shallow Water Mine CM Ship

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1.1) SW0041 COBRA BLOCK 1																															
Prior Years Deliveries: 2																															
	1	2018	NAVY	1	0	1												A -	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	2019	NAVY	1	0	1															A -	-	-	-	-	-	-	-	-	-	1
	1	2020	NAVY	1	0	1																									1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM	**Item Number / Title [DODIC]:** 1 / Shallow Water Mine CM Ship

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021												
COO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1.1) SW0041 COBRA BLOCK 1																															
Prior Years Deliveries: 2																															
	1	2018	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1													0
	1	2019	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1										0
	1	2020	NAVY	1	0	1	A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM	**Item Number / Title [DODIC]:** 1 / Shallow Water Mine CM Ship

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1.1) SW0041 COBRA BLOCK 1																															
Prior Years Deliveries: 2																															
	1	2018	NAVY	1	1	0																									0
	1	2019	NAVY	1	1	0																									0
	1	2020	NAVY	1	0	1	1																								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2624 / Shallow Water MCM	**Item Number / Title [DODIC]:** 1 / Shallow Water Mine CM Ship

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	ARETE - TUCSON, AZ	2	6	12	0	0	24	24	0	0	24	24

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	227.486	10.703	23.294	38.043	0.000	38.043	34.052	30.331	36.702	41.964	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	227.486	10.703	23.294	38.043	0.000	38.043	34.052	30.331	36.702	41.964	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**227.486**	**10.703**	**23.294**	**38.043**	**0.000**	**38.043**	**34.052**	**30.331**	**36.702**	**41.964**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.149	0.252	1.212	-	1.212	0.661	1.152	4.253	1.206	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Navigation Signal Timing and Ranging Global Positioning System (NAVSTAR GPS) provides assured and protected navigation solutions to Warfighters through supported, affordable, and integrated systems, and is the primary source of positioning, navigation and timing information for the DoD.

[P3A / (1R0013) Navigation Warfare (NAVWAR)]: NAVWAR ensures that U. S. military forces maintain access to the GPS in an electronically challenging battlespace, delivers the capability to deny adversaries access to and use of GPS during military operations, and serves to preserve the peaceful use of GPS. Navy GPS Enhanced User Equipment (UE) Operational Requirements Document directs that future UE will incorporate an increased anti-jam capability. NAVWAR counters the threat by increasing resistance to intentional or unintentional interference. Sea NAVWAR Strategy is to install Increment 2 Advanced Digital Antenna Production (ADAP) antennas on surface platforms. The second increment also includes a smaller antenna variant for surface platforms with Size, Weight, Power and Cost (SWAP-C) restrictions. The ADAP antenna improves upon Increment 1 GPS anti-jam antenna system (GAS-1) performance by providing simultaneous dual frequency nulling, and built in test ability. Procurement and installation of anti-jam GPS antennas and modernized user equipment is required to ensure the continuation of GPS signals from space in a hostile jamming environment. The Sea NAVWAR program will equip ships with anti-jam GPS antennas to ensure the continued availability of GPS to support surface combat operations and provide reliable GPS and other positioning, navigation and timing data to ship-board Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Combat, and Weapons Systems.

[P3A - 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)]: The GPS-based PNT Service (GPNTS) system is the primary PNT system for the Navy to ensure reliable PNT capability and interoperability insertion in GPS receivers and associated Command, Control, Computers, Communications and Intelligence (C4I) and Combat Systems in a denied environment. GPNTS provides more robust and secure GPS/PNT capabilities than is currently in the Fleet. GPNTS provides precise PNT data required for combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical to the network environments. GPNTS backfits current PNT/GPS systems and forward fit new platforms. GPNTS is an Open Architecture (OA) development, enabling rapid software and hardware based capability improvements to be inserted without a requirement for single-source contracting. GPNTS will host the Air Force GPS Directorate-developed Military GPS User Equipment (MGUE) card, allowing access to the new more accurate and secure GPS Military-Code (M-Code) signal. The system provides the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) and provide a path for the integration of advanced navigation systems and sensors.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / NAVSTAR GPS Receivers (Space)				- / 156.416	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / (1R0013) Navigation Warfare (NAVWAR) (Upgrade)				- / 57.630	- / 2.563	- / 6.071	- / 3.699	- / 0.000	- / 3.699
P-3a	2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS (Ship Alt)				- / 13.440	- / 8.140	- / 17.223	- / 34.344	- / 0.000	- / 34.344
P-40	**Total Gross/Weapon System Cost**				**- / 227.486**	**- / 10.703**	**- / 23.294**	**- / 38.043**	**- / 0.000**	**- / 38.043**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / NAVSTAR GPS Receivers (Space)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / (1R0013) Navigation Warfare (NAVWAR) (Upgrade)				- / 3.677	- / 1.762	- / 2.605	- / 2.356	Continuing	Continuing
P-3a	2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS (Ship Alt)				- / 30.375	- / 28.569	- / 34.097	- / 39.608	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 34.052**	**- / 30.331**	**- / 36.702**	**- / 41.964**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Navigation Warfare (NAVWAR) - In FY 2021 Sea NAVWAR will procure and field dual Advanced Digital Antenna Production (ADAP) Fiber Optic Antenna Link (FOAL) antennas. FY 2020 to FY 2021 reflect decrease in quantities from 12 to 5. Of the 5 ADAP FOAL antennas procured in FY 2021 two are for the Military Sealift Command (MSC) which are required to equip MSC ships with anti-jam GPS antennas.

Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS) program will procure and field Full Rate Production (FRP) units in FY 2021. FY 2020 to FY 2021 reflect an increase in quantities from 18 to 24. Of the 24 FRP units procured in FY2021, two are for the Military Sealift Command (MSC) required to support Positioning, Navigation and Timing.

Congressional adjustments to the FY 2020 Non-MSC GPNTS funding for procurements decreased by $9.38 million for GPNTS Excess Growth (-$9,380K). The following GPNTS changes to procurement and installation are as follows: a decrease of 11 GPNTS procurements in FY20 and their associated installations in FY21. As a result of the reduced number of installations in FY21, additional procurements will be made in FY21. The program has the infrastructure in place to successfully support the increase in procurements and installations.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Item Number / Title [DODIC]:** 1 / NAVSTAR GPS Receivers (Space)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	156.416	0.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	156.416	0.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**156.416**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Consolidated Prior Year Requirements Cost																		
Recurring Cost																		
1.1.1) Consolidated Prior Year Requirements	124.833	1,253	156.416	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*156.416*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost	**-**	**-**	***156.416***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**156.416**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Remarks:
[Flyaway] The quantities and amounts included within the Consolidated Prior Year Requirements are inclusive of PU 1R009 Navigation Sensor System Interface (NAVSSI) FMP, PU 1R011 Navigation Sensor System Interface (NAVSSI) Retrofit, PU 1R018 Defense Advance GPS Receiver (DAGR), PU 1R777 DSA and Installation for NAVSSI FMP and NAVSSI Retrofit and PU 1R555 NAVSSI FMP Production Support and NAVSSI Retrofit Production Support.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 1 / (1R0013) Navigation Warfare (NAVWAR)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	57.630	2.563	6.071	3.699	0.000	3.699	3.677	1.762	2.605	2.356	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	57.630	2.563	6.071	3.699	0.000	3.699	3.677	1.762	2.605	2.356	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**57.630**	**2.563**	**6.071**	**3.699**	**0.000**	**3.699**	**3.677**	**1.762**	**2.605**	**2.356**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Procurement and installation of anti-jam (AJ) Global Positioning System (GPS) user equipment and prevention equipment is required to ensure the continued utility of GPS signals from space in a hostile jamming environment. Sea NAVWAR will procure and field dual Advanced Digital Antenna Production (ADAP) Fiber Optic Antenna Link (FOAL) antennas in FY 2021.The Sea Navigation Warfare (NAVWAR) program will equip ships with anti-jam GPS antennas to ensure the continued availability of GPS to support surface combat operations and provide reliable GPS and other navigation sensor data to ship-board Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Combat, and Weapons Systems.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 1 / (1R0013) Navigation Warfare (NAVWAR)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore Stations, Ships	**Modification Type:** Upgrade	**Related RDT&E PEs:** 0604777N, 0604280N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: (1R0013) Navigation Warfare (NAVWAR)												
B Kits												
Recurring												
1.1.1) NAVWAR (ADAP) - NonOrganic (1)	413 / 34.209	2 / 0.876	12 / 5.328	3 / 1.356	- / -	3 / 1.356	6 / 2.760	1 / 0.465	2 / 0.946	1 / 0.482	Continuing	Continuing
1.1.2) NAVWAR MSC (ADAP) - NonOrganic (2)	- / -	- / -	- / -	2 / 0.302	- / -	2 / 0.302	- / -	2 / 0.314	5 / 0.800	4 / 0.652	- / -	13 / 2.068
1.1.3) NAVWAR MSC (ADAP) Engineering Change Proposal - Organic (3)	- / -	- / -	- / -	- / 0.146	- / -	- / 0.146	- / 0.034	- / -	- / -	- / 0.060	- / -	- / 0.240
Subtotal: Recurring	*- / 34.209*	*- / 0.876*	*- / 5.328*	*- / 1.804*	*- / -*	*- / 1.804*	*- / 2.794*	*- / 0.779*	*- / 1.746*	*- / 1.194*	*Continuing*	*Continuing*
Subtotal: (1R0013) Navigation Warfare (NAVWAR)	*413 / 34.209*	*2 / 0.876*	*12 / 5.328*	*5 / 1.804*	*- / -*	*5 / 1.804*	*6 / 2.794*	*3 / 0.779*	*7 / 1.746*	*5 / 1.194*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 34.209*	*- / 0.876*	*- / 5.328*	*- / 1.804*	*- / -*	*- / 1.804*	*- / 2.794*	*- / 0.779*	*- / 1.746*	*- / 1.194*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) NAVWAR Production Support	- / 3.204	- / 0.039	- / 0.240	- / 0.055	- / 0.000	- / 0.055	- / 0.073	- / 0.028	- / 0.055	- / 0.028	Continuing	Continuing
2.2) MSC Production Support	- / 0.000	- / 0.000	- / 0.000	- / 0.015	- / 0.000	- / 0.015	- / 0.000	- / 0.016	- / 0.020	- / 0.033	- / -	- / 0.084
2.3) NAVWAR (ADAP) DSA	- / 7.020	- / 0.088	- / 0.243	- / 0.144	- / 0.000	- / 0.144	- / 0.115	- / 0.065	- / 0.253	- / 0.045	Continuing	Continuing
2.4) NAVWAR MSC (ADAP) DSA	- / 0.000	- / 0.000	- / 0.000	- / 0.061	- / 0.000	- / 0.061	- / 0.020	- / 0.064	- / 0.126	- / 0.111	- / 0.041	- / 0.423
Subtotal: Support	*- / 10.224*	*- / 0.127*	*- / 0.483*	*- / 0.275*	*- / -*	*- / 0.275*	*- / 0.208*	*- / 0.173*	*- / 0.454*	*- / 0.217*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: (1R0013) Navigation Warfare (NAVWAR)	- / 13.197	- / 1.560	- / 0.260	- / 1.620	- / 0.000	- / 1.620	- / 0.675	- / 0.810	- / 0.405	- / 0.945	Continuing	Continuing
Subtotal: Installation	*- / 13.197*	*- / 1.560*	*- / 0.260*	*- / 1.620*	*- / -*	*- / 1.620*	*- / 0.675*	*- / 0.810*	*- / 0.405*	*- / 0.945*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**57.630**	**2.563**	**6.071**	**3.699**	**0.000**	**3.699**	**3.677**	**1.762**	**2.605**	**2.356**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 1 / (1R0013) Navigation Warfare (NAVWAR)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (1R0013) Navigation Warfare (NAVWAR)

Manufacturer Information

Manufacturer Name: RAYTHEON SYSTEMS LTD
Manufacturer Location: HARLOW-UNITED KINGDOM
Administrative Leadtime *(in Months)*: 4
Production Leadtime *(in Months)*: 9

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Aug 2019	Feb 2020	Feb 2021				
Delivery Dates	Jan 2020	Nov 2020	Nov 2021				

Installation Information

Method of Implementation: Tiger Team:: Installation Name: NAVWAR - ADAP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	401 / 13.197	12 / 1.560	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	413 / 14.757
FY 2019	- / -	- / -	2 / 0.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.260
FY 2020	- / -	- / -	- / -	12 / 1.620	0 / 0.000	12 / 1.620	- / -	- / -	- / -	- / -	0 / 0.000	12 / 1.620
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.405	- / -	- / -	- / -	0 / 0.000	3 / 0.405
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.810	- / -	- / -	0 / 0.000	6 / 0.810
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.135	- / -	0 / 0.000	1 / 0.135
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.270	0 / 0.000	2 / 0.270
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.270	1 / 0.270
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	401 / 13.197	12 / 1.560	2 / 0.260	12 / 1.620	0 / 0.000	12 / 1.620	3 / 0.405	6 / 0.810	1 / 0.135	2 / 0.270	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	401	-	3	-	9	-	-	1	1	2	2	4	4	-	1	-	2	1	3	2	-	1	-	-	-	-	1	-	1	Cont.	Cont.
Out	401	-	-	3	-	9	-	-	1	1	2	2	4	4	-	1	-	2	1	3	2	-	1	-	-	-	-	1	-	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 1 / (1R0013) Navigation Warfare (NAVWAR)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (1R0013) Navigation Warfare (NAVWAR)

Installation Information

Method of Implementation: Tiger Team:: Installation Name: MSC - ADAP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.270	- / -	- / -	- / -	0 / 0.000	2 / 0.270
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.270	- / -	0 / 0.000	2 / 0.270
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.675	0 / 0.000	5 / 0.675
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.540	4 / 0.540
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.270	- / -	2 / 0.270	5 / 0.675	4 / 0.540	13 / 1.755

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	1	-	-	2	2	1	-	4	13
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	1	-	-	2	2	1	4	13

Footnotes:

(1) 1)Advanced Digital Antenna Production (ADAP) consists of two hardware configurations; single ADAP and Dual ADAP Fiber Optic Antenna Link (FOAL), which drives the variation in average unit price each fiscal year. 2)A single ADAP shipset consists of one ADAP antenna and is installed on smaller surface platforms. A single ADAP may range in cost from $135K to $145K depending on the Economic Order Quantity Pricing and International exchange rates relevant at time of contract award. 3)A Dual ADAP FOAL shipset consists of two ADAP antennas, two FOAL drawers, & two component kits and are installed on large surface platforms. An ADAP FOAL may range in cost from $407K to $473K depending on Economic Order Quantity Pricing and International exchange rates relevant at time of contract award. The components kits are procured on two separate Indefinite Delivery Indefinite Quantity (IDIQ) contracts competed annually and integrated with the ADAP by Naval Information Warfare Systems Center (NIWC) Pacific. 4)1-2 months of integration upon receipt of ADAP Antennas. 5)Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year.

(2) The Proposed budget makes the following assumptions; 1) Funding for military sealift command (MSC) procurements and installations to correspond with concurrent Global Positioning System (GPS) based Position Navigation and Timing System (GPNTS) procurement and installations. 2) MSC GPNTS procurements are dependent on the GPNTS program of record achieving Full Rate Production (FRP) in FY20.

(3) Engineering changes are required to ensure MSC ships have the continued utility of GPS signals from space in a hostile jamming environment.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	13.440	8.140	17.223	34.344	0.000	34.344	30.375	28.569	34.097	39.608	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13.440	8.140	17.223	34.344	0.000	34.344	30.375	28.569	34.097	39.608	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13.440**	**8.140**	**17.223**	**34.344**	**0.000**	**34.344**	**30.375**	**28.569**	**34.097**	**39.608**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Global Positioning System (GPS)-based Position, Navigation, & Timing (PNT) Service (GPNTS) system is the primary PNT system for the Navy to ensure reliable PNT capability and interoperability insertion in GPS receivers and associated Command, Control, Computers, Communications and Intelligence (C4I) and Combat Systems in a denied environment. GPNTS provides more robust and secure GPS/PNT capabilities than is currently in the Fleet. GPNTS provides precise PNT data required for many combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical to the network environments. GPNTS backfits current PNT/GPS systems as well as serve as a forward fit for new platforms. GPNTS is an Open Architecture (OA) development, enabling rapid software and hardware based capability improvements to be inserted without a requirement for single-source contracting. GPNTS will host the GPS Directorate-developed Military GPS User Equipment (MGUE) card, allowing access to the new more accurate and secure GPS Military-Code (M-Code) signal. The system provides the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) and provide a path for the integration of advanced navigation systems and sensors.

GPNTS program will procure and field Full Rate Production (FRP) units in FY 2021.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore Stations, Ships	**Modification Type:** Ship Alt	**Related RDT&E PEs:** 0604777N, 0604280N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS												
B Kits												
Recurring												
1.1.1) GPNTS (Configuration B) - Ship - NonOrganic (4)	7 / 5.173	2 / 1.332	18 / 12.114	22 / 15.092	- / -	22 / 15.092	14 / 9.800	18 / 12.852	15 / 10.920	23 / 17.089	Continuing	Continuing
1.1.2) GPNTS (Shore) - NonOrganic	9 / 5.931	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 5.931
1.1.3) GPNTS (MSC) - NonOrganic (5)	- / -	- / -	- / -	2 / 1.372	- / -	2 / 1.372	- / -	2 / 1.428	5 / 3.640	4 / 2.972	- / -	13 / 9.412
1.1.4) GPNTS (MSC) Engineering Change Proposal - Organic (6)	- / -	- / -	- / -	- / 0.689	- / -	- / 0.689	- / 0.165	- / -	- / -	- / 0.335	- / -	- / 1.189
Subtotal: Recurring	*- / 11.104*	*- / 1.332*	*- / 12.114*	*- / 17.153*	*- / -*	*- / 17.153*	*- / 9.965*	*- / 14.280*	*- / 14.560*	*- / 20.396*	*Continuing*	*Continuing*
Subtotal: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS	*16 / 11.104*	*2 / 1.332*	*18 / 12.114*	*24 / 17.153*	*- / -*	*24 / 17.153*	*14 / 9.965*	*20 / 14.280*	*20 / 14.560*	*27 / 20.396*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 11.104*	*- / 1.332*	*- / 12.114*	*- / 17.153*	*- / -*	*- / 17.153*	*- / 9.965*	*- / 14.280*	*- / 14.560*	*- / 20.396*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) GPNTS Production Support	- / 0.638	- / 0.080	- / 0.727	- / 0.626	- / -	- / 0.626	- / 0.548	- / 0.771	- / 0.622	- / 0.769	Continuing	Continuing
2.2) GPNTS (MSC) Production Support	- / -	- / -	- / -	- / 0.069	- / -	- / 0.069	- / -	- / 0.066	- / 0.093	- / 0.149	- / -	- / 0.377
2.3) GPNTS DSA - FMP (7)	- / 1.698	- / 0.503	- / 3.022	- / 3.950	- / -	- / 3.950	- / 3.440	- / 3.666	- / 4.580	- / 4.133	Continuing	Continuing
2.4) GPNTS (MSC) DSA - FMP	- / -	- / -	- / -	- / 0.306	- / -	- / 0.306	- / 0.102	- / 0.266	- / 0.642	- / 0.561	- / 0.204	- / 2.081
Subtotal: Support	*- / 2.336*	*- / 0.583*	*- / 3.749*	*- / 4.951*	*- / -*	*- / 4.951*	*- / 4.090*	*- / 4.769*	*- / 5.937*	*- / 5.612*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS	- / 0.000	- / 6.225	- / 1.360	- / 12.240	- / 0.000	- / 12.240	- / 16.320	- / 9.520	- / 13.600	- / 13.600	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / 6.225*	*- / 1.360*	*- / 12.240*	*- / -*	*- / 12.240*	*- / 16.320*	*- / 9.520*	*- / 13.600*	*- / 13.600*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**13.440**	**8.140**	**17.223**	**34.344**	**0.000**	**34.344**	**30.375**	**28.569**	**34.097**	**39.608**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS

Manufacturer Information

Manufacturer Name: TBD (MSC)				Manufacturer Location: TBD			
Administrative Leadtime *(in Months)*: 4				Production Leadtime *(in Months)*: 9			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates			Feb 2021				
Delivery Dates			Nov 2021				
Manufacturer Name: Sechan Electronics, Inc.				Manufacturer Location: Lititz, PA			
Administrative Leadtime *(in Months)*: 4				Production Leadtime *(in Months)*: 9			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates	Feb 2019						
Delivery Dates	Nov 2019						
Manufacturer Name: TBD (Conf B)				Manufacturer Location: TBD			
Administrative Leadtime *(in Months)*: 4				Production Leadtime *(in Months)*: 9			
Dates	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
Contract Dates		Feb 2020	Feb 2021				
Delivery Dates		Nov 2020	Nov 2021				

Installation Information

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Config B

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	7 / 4.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 4.200
FY 2019	- / -	- / -	2 / 1.360	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.360
FY 2020	- / -	- / -	- / -	18 / 12.240	0 / 0.000	18 / 12.240	- / -	- / -	- / -	- / -	0 / 0.000	18 / 12.240
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	22 / 14.960	- / -	- / -	- / -	0 / 0.000	22 / 14.960
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 9.520	- / -	- / -	0 / 0.000	14 / 9.520
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 12.240	- / -	0 / 0.000	18 / 12.240
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 10.200	0 / 0.000	15 / 10.200
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	23 / 15.640	23 / 15.640
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS

Installation Information

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Config B

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total	- / -	7 / 4.200	2 / 1.360	18 / 12.240	0 / 0.000	18 / 12.240	22 / 14.960	14 / 9.520	18 / 12.240	15 / 10.200	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	3	-	4	-	1	-	1	3	6	9	-	4	6	7	5	1	3	4	6	5	7	5	1	2	6	5	2	22	118
Out	-	-	-	3	-	4	-	1	-	1	3	6	9	-	4	6	7	5	1	3	4	6	5	7	5	1	2	6	5	24	118

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Shore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	9 / 2.025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.025
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	9 / 2.025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.025

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS

Installation Information

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Shore

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Out	-	-	-	-	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9

Method of Implementation: Tiger Team:: Installation Name: GPNTS - MSC

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.360	- / -	- / -	- / -	0 / 0.000	2 / 1.360
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.360	- / -	0 / 0.000	2 / 1.360
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3.400	0 / 0.000	5 / 3.400
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.720	4 / 2.720
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.360	- / -	2 / 1.360	5 / 3.400	4 / 2.720	13 / 8.840

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	1	-	-	2	2	1	-	4	13
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	1	-	-	2	2	1	4	13

Footnotes:

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2657 / NAVSTAR GPS Receivers (Space)	**Modification Number / Title:** 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(4) Congressional adjustments to the FY 2020 Non-MSC GPNTS funding for procurements decreased by $9.38 million for GPNTS Excess Growth (-$9,380K). The following GPNTS changes to procurement and installation are as follows: a decrease of 11 GPNTS procurements in FY20 and their associated installations in FY21. As a result of the reduced number of installations in FY21, additional procurements will be made in FY21. The program has the infrastructure in place to successfully support the increase in procurements and installations. The procurement of (22) units are required in order to meet FRP in FY21.

(5) The Proposed budget makes the following assumptions; 1) Funding for military sealift command (MSC) procurements and installations to correspond with concurrent MSC NAVWAR Advance Digital Antenna Production (ADAP) procurement and installations. 2) MSC Global Positioning System (GPS) based Position Navigation and Timing System (GPNTS) procurements are dependent on the GPNTS program of record achieving Full Rate Production (FRP) in FY20.

(6) Engineering changes required will provide improvements to Military Sealift Command (MSC) PNT systems, needed to maintain interoperability with operational/supported forces operating in contested environments.

(7) 1)Additional funds provided in FY 2021 - FY 2025 to ensure fielding plan is adjusted to support Full Operational Capability (FOC) in FY 2026. 2)Shore units are fielded as operational installations. Shore sites do not have the same constraints and restrictions as afloat sites and therefore have reduced installation costs. 3)Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year. 4)Unit cost for each procured Ship set is a Dual Redundant System consisting of two Racks and two GPS Receivers. GPNTS awarded two (2) IDIQ type production contracts in March 2018. Procured units are competed between two (2) prime vendors on an annual basis and per delivery order to promote continuous competitive pricing through the life of the contract.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2666 / American Forces Radio and TV Service (AFRTS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	40.032	2.626	2.617	2.592	0.000	2.592	2.590	2.656	2.695	2.749	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	40.032	2.626	2.617	2.592	0.000	2.592	2.590	2.656	2.695	2.749	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**40.032**	**2.626**	**2.617**	**2.592**	**0.000**	**2.592**	**2.590**	**2.656**	**2.695**	**2.749**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

K0001: American Forces Radio and Television Service (AFRTS) Program - AFRTS shipboard systems provide command information to deployed Sailors and Marines and allow for the distribution of AFRTS programming in order to provide situational awareness for forward deployed commanders with real-time news and information. The systems also provide programming to Sailors and Marines at sea worldwide as a Navy Quality of Life (QOL) initiative, staying in compliance with the Chief of Naval Operations (CNO) Shipboard Habitability Program. These systems contribute significantly to the habitability of Navy ships by providing and distributing news, command information, training, and entertainment programming using the latest technology available. These systems improve morale, combat effectiveness and retention rates of deployed personnel. All AFRTS systems use Commercial-Off-the-Shelf (COTS) equipment. Fleet Support Detachments (FSDs) are the installing agents for these systems. Each component replacement is made based on ship availability, condition of system, and is coordinated through the Type Commanders (TYCOMs).

[P5 / Site CCTV - Digital/300]: K0001 - Shipboard Information, Training and Entertainment (SITE) Closed Circuit Television (CCTV) - Digital/300 - Digital/300 is the next generation of the SITE 2000/300. This system is a digitally-based replacement for the 2000/300 playback. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/replacement agents and condition of the system.

[P5 / Site CCTV - Digital/400]: Shipboard Information, Training and Entertainment (SITE) Closed Circuit Television (CCTV) - Digital/400 - is the next generation of the SITE 2000/400. This system is a digitally-based replacement for the 2000/400 playback. Requires manpower of one dedicated technician and operator. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/replacement agents and condition of the system.

[P5 / Site CCTV - Digital/501]: Digital/500 - is the next generation of the Shipboard Information, Training and Entertainment (SITE) 2000/500. This system is a digitally-based replacement for the 2000/500 playback. Requires manpower of two dedicated technicians and three operators. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/repair agents and condition of the system.

[P5 / Shipboard Broadcast System (SBS)]: K0001-Shipboard Broadcast System (SBS): The SBS system replaces the Shipboard Information, Training and Entertainment (SITE) 300/400/501 systems with an Internet Protocol (IP) video system. It collects and converts video content from several sources: Navy Motion Picture Services (NMPS) programming via encrypted DVDs (nDVD), Video Server, and shipboard surveillance cameras; and distributes the signals via Circuit 30 in Standard or High Definition. Each system is comprised of Commercial Off-The-Shelf (COTS) equipment that takes six to twelve months to procure. Each system upgrade is done based on ship availability by the Fleet Support Detachments (FSDs) as the installing/replacing agent and condition of the system.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2666 / American Forces Radio and TV Service (AFRTS)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P5 / K0830 - Production Engineering]: Supports review and approval of any production contract technical documentation or the separate development of this documentation to include: signal flow diagrams, Preventive Maintenance Services (PMS), production drawings, provisioning technical documentation (PTD), Integrated Logistic Support (ILS), Program Support Data (PSD), Allowance Parts List (APL's), and engineering in support of final design reviews.

[P5 / K0INS - Non-FMP Installation]: Supports the installation of Shipboard Information, Training and Entertainment (SITE), TV-DTS (TV-Direct to Sailor) system onboard Navy ships. Installations are performed by Defense Media Activity Agency (DMAA) Fleet Support Detachments (FSDs) and are based on Type Commander (TYCOM) nominations.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2666 / American Forces Radio and TV Service (AFRTS)

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / American Forces Radio and TV Service (AFRTS)	P-5a			- / 40.032	- / 2.626	- / 2.617	- / 2.592	- / 0.000	- / 2.592
P-40	**Total Gross/Weapon System Cost**				**- / 40.032**	**- / 2.626**	**- / 2.617**	**- / 2.592**	**- / 0.000**	**- / 2.592**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2666 / American Forces Radio and TV Service (AFRTS)	**Item Number / Title [DODIC]:** 1 / American Forces Radio and TV Service (AFRTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	40.032	2.626	2.617	2.592	0.000	2.592
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	40.032	2.626	2.617	2.592	0.000	2.592
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**40.032**	**2.626**	**2.617**	**2.592**	**0.000**	**2.592**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) Site CCTV - Digital/300(†)	83,571.43	35	2.925	10,000.00	2	0.020	10,000.00	3	0.030	10,000.00	1	0.010	-	-	-	10,000.00	1	0.010
1.1.2) Site CCTV - Digital/400(†)	63,833.33	30	1.915	10,000.00	3	0.030	10,000.00	2	0.020	10,000.00	1	0.010	-	-	-	10,000.00	1	0.010
1.1.3) Site CCTV - Digital/501(†)	112,571.43	7	0.788	10,000.00	2	0.020	10,000.00	2	0.020	-	-	-	-	-	-	-	-	-
1.1.4) Shipboard Broadcast System (SBS)(†)	-	-	-	302,666.00	1	0.303	302,666.00	1	0.303	302,666.00	1	0.303	-	-	-	302,666.00	1	0.303
Subtotal: Recurring Cost	-	-	*5.628*	-	-	*0.373*	-	-	*0.373*	-	-	*0.323*	-	-	-	-	-	*0.323*
Subtotal: Hardware Cost	**-**	**-**	***5.628***	**-**	**-**	***0.373***	**-**	**-**	***0.373***	**-**	**-**	***0.323***	**-**	**-**	**-**	**-**	**-**	***0.323***
Support Cost																		
2.1) K0830 - Production Engineering	-	-	30.512	-	-	2.057	-	-	2.050	-	-	2.074	-	-	-	-	-	2.074
2.2) K0INS - Non-FMP Installation	-	-	3.892	-	-	0.196	-	-	0.194	-	-	0.195	-	-	-	-	-	0.195
Subtotal: Support Cost	**-**	**-**	***34.404***	**-**	**-**	***2.253***	**-**	**-**	***2.244***	**-**	**-**	***2.269***	**-**	**-**	**-**	**-**	**-**	***2.269***
Gross/Weapon System Cost	**-**	**-**	**40.032**	**-**	**-**	**2.626**	**-**	**-**	**2.617**	**-**	**-**	**2.592**	**-**	**-**	**0.000**	**-**	**-**	**2.592**

Remarks:

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2666 / American Forces Radio and TV Service (AFRTS)	**Item Number / Title [DODIC]:** 1 / American Forces Radio and TV Service (AFRTS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

[Hardware] FY19 and out-year procurements for CE 1.1.1 -SITE 300(U); 1.1.2 - SITE 400(U) and 1.1.3 - SITE 501(U) are in support of hardware components to maintain the fielded digital SITE systems due to known obsolescence issued.

CE 1.1.4 shows the follow-on system to SITE CCTV, called SBS (Shipboard Broadcasting System). It uses IP technology, the new industry standard, and was introduced in FY18 as aging SITE systems reach end of life.

[Hardware/Recurring]

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)	Item Number / Title [DODIC]: 1 / American Forces Radio and TV Service (AFRTS)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Site CCTV - Digital/300		2012	Various / Various	MIPR	T-ASA	Jun 2012	Dec 2012	2	5,000.00	Y		
1.1.1) Site CCTV - Digital/300		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	7	85,000.00	Y		
1.1.1) Site CCTV - Digital/300		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	11	85,000.00	Y		
1.1.1) Site CCTV - Digital/300		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	4	90,000.00	Y		
1.1.1) Site CCTV - Digital/300		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	4	90,000.00	Y		
1.1.1) Site CCTV - Digital/300		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	5	95,000.00	Y		
1.1.1) Site CCTV - Digital/300		2018	Various / Various	MIPR	T-ASA	Feb 2018	Aug 2018	2	95,000.00	Y		
1.1.1) Site CCTV - Digital/300		2019	Various / Various	MIPR	T-ASA	Dec 2018	Jun 2019	2	10,000.00	Y		
1.1.1) Site CCTV - Digital/300		2020	Various / Various	WR	NWIC ATL	Dec 2019	Jun 2020	3	10,000.00	Y		
1.1.1) Site CCTV - Digital/300		2021	Various / Various	WR	NWIC ATL	Dec 2020	Jun 2021	1	10,000.00	Y		
1.1.2) Site CCTV - Digital/400		2012	Various / Various	MIPR	T-ASA	Jun 2012	Dec 2012	10	5,000.00	Y		
1.1.2) Site CCTV - Digital/400		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	3	90,000.00	Y		
1.1.2) Site CCTV - Digital/400		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	6	90,000.00	Y		
1.1.2) Site CCTV - Digital/400		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	3	90,000.00	Y		
1.1.2) Site CCTV - Digital/400		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	3	95,000.00	Y		
1.1.2) Site CCTV - Digital/400		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	3	100,000.00	Y		
1.1.2) Site CCTV - Digital/400		2018	Various / Various	MIPR	T-ASA	Feb 2018	Aug 2018	2	100,000.00	Y		
1.1.2) Site CCTV - Digital/400		2019	Various / Various	MIPR	T-ASA	Dec 2018	Jun 2019	3	10,000.00	Y		
1.1.2) Site CCTV - Digital/400		2020	Various / Various	WR	NWIC ATL	Dec 2019	Jun 2020	2	10,000.00	Y		
1.1.2) Site CCTV - Digital/400		2021	Various / Various	WR	NWIC ATL	Dec 2020	Jun 2021	1	10,000.00	Y		
1.1.3) Site CCTV - Digital/501		2012	Various / Various	MIPR	T-ASA	Jun 2012	Dec 2012	1	110,000.00	Y		
1.1.3) Site CCTV - Digital/501		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	1	103,000.00	Y		
1.1.3) Site CCTV - Digital/501		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	1	110,000.00	Y		
1.1.3) Site CCTV - Digital/501		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	1	115,000.00	Y		
1.1.3) Site CCTV - Digital/501		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	1	115,000.00	Y		
1.1.3) Site CCTV - Digital/501		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	1	115,000.00	Y		
1.1.3) Site CCTV - Digital/501		2018	Various / Various	MIPR	T-ASA	Feb 2018	Aug 2018	1	120,000.00	Y		
1.1.3) Site CCTV - Digital/501		2019	Various / Various	WR	NWIC ATL	Dec 2018	Jun 2019	2	10,000.00	Y		
1.1.3) Site CCTV - Digital/501		2020	Various / Various	WR	NWIC ATL	Dec 2019	Jun 2020	2	10,000.00	Y		
1.1.4) Shipboard Broadcast System (SBS)		2019	VARIOIUS / VARIOUS	MIPR	T-ASA	Dec 2018	Jun 2019	1	302,666.00	Y		
1.1.4) Shipboard Broadcast System (SBS)		2020	VARIOIUS / VARIOUS	WR	NWIC ATL	Dec 2019	Jun 2020	1	302,666.00	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2666 / American Forces Radio and TV Service (AFRTS)	**Item Number / Title [DODIC]:** 1 / American Forces Radio and TV Service (AFRTS)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.4) Shipboard Broadcast System (SBS)		2021	VARIOIUS / VARIOUS	WR	NWIC ATL	Dec 2020	Jun 2021	1	302,666.00	Y		

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2676 / Strategic Platform Support Equip

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	53.544	9.467	7.973	7.985	0.000	7.985	4.974	6.248	6.324	6.442	-	102.957
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	53.544	9.467	7.973	7.985	0.000	7.985	4.974	6.248	6.324	6.442	-	102.957
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**53.544**	**9.467**	**7.973**	**7.985**	**0.000**	**7.985**	**4.974**	**6.248**	**6.324**	**6.442**	**-**	**102.957**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.861	0.907	0.990	-	0.990	0.997	0.971	1.002	0.967	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding in this P-1 line provides Non-Propulsion Electronics equipment that will be installed aboard TRIDENT Class submarines as part of the Obsolete Equipment Replacement (OER) Program.

OER Program is the replacement of existing hardware/software that, though functional, has become operationally obsolete, is no longer in production or supportable with spare parts, or has a high failure rate making them no longer cost effective to maintain. OER hardware/software changes are expected to provide significant cost savings via reduced maintenance costs and use Commercial-Off-The-Shelf (COTS) technology wherever possible as long as all technical requirements are met.

This funding line includes performance of the required fully integrated system level testing and certification of changes to the TRIDENT Combat systems prior to installation of the changes on the ship. Integrated testing and certification provides assurance that when the changes are installed in the ship, the TRIDENT Combat system will operate as designed, allowing the ships to maintain their operational schedules and mission capabilities.

[P40A / CCS Revision Engineering Cert/Test]: This program develops upgrades to legacy systems to maintain required interface connectivity to other Program Acquisition Resource Manager (PARM)-managed subsystems in response to PARMs modernizations, or to address obsolescence, or where mandated requirement changes (example Cyber security) drive changes to hardware or software.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	**P-1 Line Item Number / Title:** 2676 / Strategic Platform Support Equip

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Strategic Platform Support Equip	P-5a			- / 53.544	- / 9.467	- / 7.973	- / 7.985	- / -	- / 7.985
P-40	**Total Gross/Weapon System Cost**				**- / 53.544**	**- / 9.467**	**- / 7.973**	**- / 7.985**	**- / 0.000**	**- / 7.985**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	**P-1 Line Item Number / Title:** 2676 / Strategic Platform Support Equip	**Aggregated Items Title:** Strategic Platform Support Equip

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) P1221 Strategic Platform Support Equip NPES																				
1.1) Common Platform Engineering(†)	A		1,522K	7	10.653	957,000.00	1	0.957	987,000.00	1	0.987	1,007K	1	1.007	-	-	-	1,007K	1	1.007
1.2) CCS Revision Engineering Cert/Test (1)	A		-	-	18.850	-	-	2.311	-	-	2.425	-	-	2.454	-	-	-	-	-	2.454
1.3) SSBN Legacy CCS Modernization (2)	A		-	-	24.041	-	-	6.199	-	-	4.561	-	-	4.524	-	-	-	-	-	4.524
Subtotal: 1) P1221 Strategic Platform Support Equip NPES			**-**	**-**	***53.544***	**-**	**-**	***9.467***	**-**	**-**	***7.973***	**-**	**-**	***7.985***	**-**	**-**	**-**	**-**	**-**	***7.985***
Total			**-**	**-**	**53.544**	**-**	**-**	**9.467**	**-**	**-**	**7.973**	**-**	**-**	**7.985**	**-**	**-**	**-**	**-**	**-**	**7.985**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) CCS Revision Engineering Cert/Test: This funding is required for software upgrades to the SSBN Ship Control System to meet data stream (heading/speed/depth) redundancy requirements driven by the Non-Propulsion Electrical Systems (NPES) network architecture changes being fielded by SSBN modernization (Submarine Warfare Federated Tactical System (SWFTS) Technical Insertion (TI)-16/18 sonar/fire control modernization).

(2) SSBN Legacy CCS Modernization: This program is critical to maintaining OHIO Class SSBN operational to the end of service life and delivery of COLUMBIA Class SSBN replacements. The program resolves Data Processing Subsystem (DPS) obsolescence issues and conjunctively supports the upgrade of the SSBN legacy CCS to the Submarine Warfare Federated Tactical Systems (SWFTS) architecture common with the SSN/SSGN classes. Collectively, the DPS and SWFTS upgrades modify Fire Control, SONAR, Voyage Management System (VMS), RADAR, Tactical Navigation, and Periscopes, and collaterally impact Ship Control, Monitoring Subsystem, and interfaces to ship sensors such as speed, depth, and Extremely High Frequency Satellite Communication navigation data. The DPS upgrade includes replacing all UYK-43 computers, DPS workstation, TRIDENT Signal Data Converters (TSDC), and the UGC-143 with a modified Electronic Control Display Unit (ECDU). The ECDU is common equipment on VA Class and planned for the COLUMBIA Class. The ECDU requires hardware and software development to interface to the Strategic Weapon System (SWS) Navigation and maintain critical Ship to SWS interface requirements. The ECDU and all the associated CCS architecture modifications are required to be installed conjunctively with SWFTS. Continued operation of the SSBN strategic mission will require the implementation of the ECDU upgrade along with the SWFTS upgrade.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2676 / Strategic Platform Support Equip	Aggregated Items: Strategic Platform Support Equip

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) P1221 Strategic Platform Support Equip NPES												
1.1) Common Platform Engineering		2019	NUWC NPT / NEWPORT, RI	WR	NAVSEA	Apr 2019	Aug 2019	1	957,000.00	Y		
1.1) Common Platform Engineering		2020	NUWC NPT / NEWPORT, RI	WR	NAVSEA	Apr 2020	Aug 2020	1	987,000.00	N		
1.1) Common Platform Engineering		2021	NUWC NPT / NEWPORT, RI	WR	NAVSEA	Apr 2021	Aug 2021	1	1,007K	N		

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	159.445	70.849	71.037	83.475	0.000	83.475	87.104	87.773	87.534	87.444	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	159.445	70.849	71.037	83.475	0.000	83.475	87.104	87.773	87.534	87.444	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**159.445**	**70.849**	**71.037**	**83.475**	**0.000**	**83.475**	**87.104**	**87.773**	**87.534**	**87.444**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	2.238	2.017	3.179	-	3.179	2.551	2.211	1.979	1.978	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

MATCALS

Marine Air Traffic Control and Landing Systems (MATCALS) provides for continuous, all-weather, radar/non-radar approach, departure, enroute, and tower air traffic control services to aircraft. Marine ATC provides initial, transition and sustained air traffic support for the Joint and Marine Air Ground Task Force air operations in any environment. MATCALS satisfies the operational requirements set forth by Specific Operational Requirements 34-22 of 12 Jul 1973; Remote Landing Site Tower (RLST) Operational Requirements Document (ORD) 341-88-93 of 25 Jul 1997; and Air Traffic Navigation Integration and Coordination System ORD 05-002 of 03 Dec 1992. MATCALS, with other Marine Air Command and Control Systems (MACCS) and federal agencies, provides the ability to project air combat power without regard to weather. Air Traffic Control (ATC) automation reduces air traffic controllers' traffic handling and management time, allowing more time for mission response and task accomplishment. It supports a required increase in aircraft sortie rates and contributes to extended time on target. The system provides for integration of ATC into the total MACCS. To provide this capability, MATCALS consists of 7 primary subsystems: (1) Air Traffic Navigation Integration and Coordination system (ATNAVICS) AN/TPX-31(V); (2) Tactical Terminal Communication System (TTCS) AN/TSQ-263; (3) Expeditionary Control Tower AN/TSQ-120C; (4) RLST AN/TSQ-216; (5)Tactical Air Navigation (TACAN) AN/TRN-44; (6) the Man-Portable TACAN AN/TRN-47(V)1, (7) Transportable AN/TRN-47(V)2 and various ancillary equipment. The ATNAVICS Air Surveillance Radar (ASR) Range Extension is funded to meet requirements identified in the ATC Initial Capabilities Document ICD (ICD), MROC DM 75-7007, MACC Operational Advisory Group. The gaps identified require sustainment of legacy sensor capability until such time as ATNAVICS PrePlanned Product Improvement initiatives enhance system capability to support main air base traffic density and airspace. Additionally, the positive control enabled by increased ASR range reduces separation enabling increased sortie rates. This program works with the Marine ATC Working Group identifying the requirements to implement the P3I and evolutionary product improvements as required for G/ATOR system, ATNAVICS, Expeditionary ATC Towers, and Navigational Aids that support Marine Air Traffic Control Detachments. G/ATOR is multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System and the Ground Counter Fire/ Counter Battery capabilities.

NASMOD

The Joint DoD/Federal Aviation Administration (FAA) National Airspace System (NAS) Modernization (MOD) program upgrades the DoD ATC systems at approach control facilities in concert with the FAA's upgrade of the National ATC System. These funds will procure ATC systems for the Navy/Marine ATC facilities. The Air Force is the DoD lead activity for the Joint Acquisition Program. The Joint Program Office is located at Hanscom AFB, MA. The NAS Mod program received a full rate production decision on 7 June 2005 and is in the production and deployment phase following Milestone C.

FLEET ATC SYSTEMS

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

NAVAIR provides shore based ATC terminal facilities with equipment that is required in joint efforts to efficiently and safely monitor and direct military and commercial air traffic in national and international air space. Many of these systems are required to interface through automated means with the FAA. Additionally, NAVAIR has material support responsibility for Special Instrumentation Systems, and Ancillary Equipment used at Navy and Marine Corps Aviation Shore activities in the continental United States and overseas.

Engineering Change Proposal (ECP)/Operational Capability Improvement Request (OCIR) modernization (MR069) - The ECP/OCIR program provides for the procurement and/or modification of critically needed communications, radar, displays, data processors, and other electronic systems/equipment at Navy/Marine Corps ATC facilities worldwide. ECP/OCIR procurements replace and modernize costly-to-maintain systems and equipment in order to increase ATC efficiency and safety, and reduce total ownership costs.

UHF/VHF Antenna Upgrade (MR404) - This program procures and installs antenna, antenna towers, and antenna cables

Communications Systems Upgrade Program (MR408) - This program procures and installs advanced commercial state-of-the-art ATC voice switching equipment.

UHF/VHF Transceiver Replacement Program (MR440) - This program modernizes aging Navy and Marine Corps UHF/VHF Transceivers that are the central core of all ATC emergency and Fleet Area Control & Surveillance Facility (FACSFAC) communications.

Emergency Communication System (ECS) Upgrade Program (MR445) - This program modernizes obsolete and unsupportable ECS equipment. Voice Switches, Recorders, Reproducers, Uninterruptable Power Supplies, and Built-In Test Equipment will be replaced with modern, supportable components.

Air Field Lighting Control System (AFLCS) (MR510) - This program modernizes obsolete and unsupportable AFLCS equipment which will be replaced with modern, supportable components. Funding for this effort was realigned to the Terminal Automation System (TAS) CB070 beginning in FY18. The TAS provides the functionality and meets the requirements of the airfield lighting control as prescribed in the NASMOD ORD III Airfield Automation Annex A dated 16MAR05.

Operational Communication System (OCS)/Emergency Communication System (ECS) Air Traffic Control (ATC) Recorder replacement program (MR520), through participation in the FAA ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology.

Fiber Optic Communications Intersite System (FOCIS) Upgrade Program (MR530) - FOCIS is required for Precision Approach Radar (PAR) operations and for ATC voice communications at Naval and Marine Corps ATC facilities. This program modernizes obsolete and unsupportable FOCIS equipment with modern supportable components.

LANDING SYSTEMS
Landing Systems budget provides funding to modernize and ensure the reliability of Precision Approach Radars (PAR), Tactical Air Navigation (TACAN) systems, Instrument Landing Systems (ILS), and other air navigation aids used by the Navy and Marine Corps.

The PAR Commercial-off-the-shelf (AN/FPN-68A) Upgrade replaces obsolete PAR systems (AN/FPN-63), continuing fleet shore-based Precision Approach capability. PAR (AN/FPN-63) safety-related ECPs are required to sustain the existing systems until replacement with the AN/FPN-68A. Installation costs will be site specific due to state and EPA regulations that will be adhered to for each install. Those ECPs include, but are not limited to, the Maintenance Walkway, the Modulator Board Upgrade, the Antenna Upgrade, the Configuration Upgrade, the Turntable Upgrade, the Fiber Optic Inter-site System (FOIS), and the Angle Voltage Generator (AVG) Upgrade

TACAN Ship/Shore Upgrade ECPs update old technology and extend the service life of the TACAN. The TACAN sustainment consists of the Antenna Upgrade ECP for the OE-273 antenna which will make the antenna OE-4691(V)1 and the Beacon/RSCU Upgrade ECP of the AN/URN-25 which will make the upgraded Beacon an AN/URN-32.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Instrument Landing Systems AN/GRN-33(V) will provide the Navy and Marine Corps with a self-contained Precision Landing capability at selected Air Stations, to meet fleet requirements for safe aircraft recovery of aircraft equipped with ILS capability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / MATCALS				- / 6.063	- / 3.023	- / 4.200	- / 4.823	- / 0.000	- / 4.823
P-5	2 / Fleet Air Traffic Control Systems				- / 15.075	- / 7.117	- / 10.156	- / 8.601	- / 0.000	- / 8.601
P-5	3 / Landing Systems				- / 4.465	- / 4.452	- / 4.457	- / 7.079	- / 0.000	- / 7.079
P-3a	1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455) (Modification)				- / 6.495	- / 2.397	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / MJ465 AMTAC (Modification)				- / 14.746	- / 0.000	- / 0.000	- / 4.664	- / 0.000	- / 4.664
P-3a	3 / CB010 - DoD Advanced Automation System (DAAS) (Added Capability)				- / 9.075	- / 2.383	- / 0.868	- / 1.039	- / 0.000	- / 1.039
P-3a	4 / CB030 Digital Airport Surveillance Radar (DASR) (Added Capability)				- / 0.800	- / 0.939	- / 0.418	- / 0.431	- / 0.000	- / 0.431
P-3a	5 / CB040 Tower Automation System (TAS) (Added Capability)				- / 0.400	- / 1.142	- / 1.654	- / 1.361	- / 0.000	- / 1.361
P-3a	6 / CB050 STARS TECH Refresh Upgrade (AIT)				- / 25.622	- / 11.582	- / 2.682	- / 0.000	- / 0.000	- / 0.000
P-3a	7 / CB070 TAS Tech Refresh (Added Capability)				- / 6.570	- / 4.347	- / 4.716	- / 1.607	- / 0.000	- / 1.607
P-3a	8 / CB080 NAS Voice System (NVS) (Added Capability)				- / 13.858	- / 6.589	- / 8.374	- / 10.266	- / 0.000	- / 10.266
P-3a	9 / CB090 - DAAS Tech Refresh Upgrade II (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.652	- / 0.000	- / 0.652
P-3a	10 / CB100 TAS Tech Refresh Upgrade II (TBD)				- / 0.000	- / 0.600	- / 7.065	- / 14.000	- / 0.000	- / 14.000
P-3a	11 / CB110 DASR Tech Refresh Upgrade III (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.505	- / 0.000	- / 0.505
P-3a	12 / X1036 AN/FPN-63 PAR TECH REFRESH (Reliability)				- / 20.263	- / 12.212	- / 12.290	- / 12.523	- / 0.000	- / 12.523
P-3a	13 / X1037 Instrument Landing System Upgrade (TBD)				- / 9.053	- / 4.156	- / 4.163	- / 5.309	- / 0.000	- / 5.309
P-3a	14 / X1043 TACAN Antenna Upgrade (Modernization)				- / 26.960	- / 9.910	- / 9.994	- / 10.615	- / 0.000	- / 10.615
P-40	**Total Gross/Weapon System Cost**				**- / 159.445**	**- / 70.849**	**- / 71.037**	**- / 83.475**	**- / 0.000**	**- / 83.475**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / MATCALS				- / -	- / -	- / -	- / -	- / -	- / -
P-5	2 / Fleet Air Traffic Control Systems				- / -	- / -	- / -	- / -	- / -	- / -
P-5	3 / Landing Systems				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455) (Modification)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.892
P-3a	2 / MJ465 AMTAC (Modification)				- / 4.749	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 24.159
P-3a	3 / CB010 - DoD Advanced Automation System (DAAS) (Added Capability)				- / 0.234	- / 0.424	- / 0.428	- / 0.428	Continuing	Continuing
P-3a	4 / CB030 Digital Airport Surveillance Radar (DASR) (Added Capability)				- / 0.444	- / 0.453	- / 0.398	- / 0.459	Continuing	Continuing
P-3a	5 / CB040 Tower Automation System (TAS) (Added Capability)				- / 0.319	- / 0.325	- / 0.238	- / 0.238	Continuing	Continuing

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-3a	6 / CB050 STARS TECH Refresh Upgrade (AIT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 39.886
P-3a	7 / CB070 TAS Tech Refresh (Added Capability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 17.240
P-3a	8 / CB080 NAS Voice System (NVS) (Added Capability)				- / 10.558	- / 7.503	- / 6.788	- / 12.650	Continuing	Continuing
P-3a	9 / CB090 - DAAS Tech Refresh Upgrade II (TBD)				- / 3.567	- / 7.210	- / 6.191	- / 6.750	Continuing	Continuing
P-3a	10 / CB100 TAS Tech Refresh Upgrade II (TBD)				- / 11.931	- / 10.585	- / 10.675	- / 4.924	Continuing	Continuing
P-3a	11 / CB110 DASR Tech Refresh Upgrade III (TBD)				- / 3.022	- / 2.771	- / 4.337	- / 4.873	Continuing	Continuing
P-3a	12 / X1036 AN/FPN-63 PAR TECH REFRESH (Reliability)				- / 12.668	- / 12.901	- / 13.049	- / 10.582	Continuing	Continuing
P-3a	13 / X1037 Instrument Landing System Upgrade (TBD)				- / 5.574	- / 5.503	- / 5.710	- / 6.265	Continuing	Continuing
P-3a	14 / X1043 TACAN Antenna Upgrade (Modernization)				- / 11.097	- / 11.580	- / 11.944	- / 12.354	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 87.104**	**- / 87.773**	**- / 87.534**	**- / 87.444**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

MATCALS

FY2021 provides funding to procure Maintainability/Reliability Improvements (MRI) for deployable Air Traffic Equipment, which supports safe and orderly Marine, Joint, and Coalition aviation control in permissive areas and non-permissive combat zones into and out of expeditionary airfields, forward operating bases, and forward arming / refueling points. FY2021 funding will also procure 2 AN/TRN 47(V)2 Airfield Mobile Tactical Aid to Navigation (AMTAC) systems. Additional MRI funding has been provided FY23-25 for the replacement of the obsolete voice switch, which is vital to expeditionary control tower operations.

NASMOD

The Federal Aviation Administration (FAA) began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information to augment ground-based radar. Existing DoD Air Traffic Control (ATC) facilities interface with FAA's facilities, therefore the military must maintain interoperability and retain vital special-use airspace for combat readiness training. The DoD Advanced Automation System (DAAS) must be upgraded to meet this requirement.

FY2021 provides funding to procure 669 NAS Voice System Radios, 16 TAS Tech Refresh II Upgrades, and various Engineering Change Proposals (ECPs) and associated Support.

FLEET ATC SYSTEMS

The basis for the FY2021 budget request is to continue modernizing aging Navy and Marine Corps ATC facilities and equipment in order to safely monitor and direct military and commercial air traffic in national and international air space. This equipment must continue to interface through automated means with the FAA.

FY2021 provides funding to procure 2 UHF/VHF Antenna Upgrades, 13 OCS/ECS ATC Recorder upgrades, 3 FOCIS Upgrades, various ECPs/OCIRs and associated support

LANDING SYSTEMS

FY2020 provides funding to procure: 3 PAR Tech Refresh COTs, 2 ILS Upgrades, 24 TACAN Antenna Upgrades, and 24TACAN Beacon Upgrades.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Item Number / Title [DODIC]: 1 / MATCALS
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	6.063	3.023	4.200	4.823	0.000	4.823
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	6.063	3.023	4.200	4.823	0.000	4.823
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**6.063**	**3.023**	**4.200**	**4.823**	**0.000**	**4.823**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - ECP / ECO Cost																		
Recurring Cost																		
1.1.1) MAINT / RELIABILITY IMPROVEMENT (MJ427) (1)	-	-	5.441	-	-	2.421	-	-	3.207	-	-	3.812	-	-	0.000	-	-	3.812
Subtotal: Recurring Cost	-	-	*5.441*	-	-	*2.421*	-	-	*3.207*	-	-	*3.812*	-	-	*0.000*	-	-	*3.812*
Subtotal: Hardware - ECP / ECO Cost	**-**	**-**	***5.441***	**-**	**-**	***2.421***	**-**	**-**	***3.207***	**-**	**-**	***3.812***	**-**	**-**	***0.000***	**-**	**-**	***3.812***
Support - MISCELLANEOUS SUPPORT Cost																		
5.2) Install (MJ900)	-	-	0.622	-	-	0.602	-	-	0.993	-	-	1.011	-	-	0.000	-	-	1.011
Subtotal: Support - MISCELLANEOUS SUPPORT Cost	**-**	**-**	***0.622***	**-**	**-**	***0.602***	**-**	**-**	***0.993***	**-**	**-**	***1.011***	**-**	**-**	***0.000***	**-**	**-**	***1.011***
Gross/Weapon System Cost	**-**	**-**	**6.063**	**-**	**-**	**3.023**	**-**	**-**	**4.200**	**-**	**-**	**4.823**	**-**	**-**	**0.000**	**-**	**-**	**4.823**

Footnotes:

(1) Additional MRI funding has been provided FY23-25 for the replacement of the obsolete voice switch, which is vital to expeditionary control tower operations.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Item Number / Title [DODIC]: 2 / Fleet Air Traffic Control Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	15.075	7.117	10.156	8.601	0.000	8.601
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	15.075	7.117	10.156	8.601	0.000	8.601
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**15.075**	**7.117**	**10.156**	**8.601**	**0.000**	**8.601**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - Fleet ATC - Hardware Cost																		
Recurring Cost																		
1.1.1) MR069 ECP/ OCIR (2)	270,000.00	2	0.540	224,333.33	3	0.673	653,000.00	2	1.306	186,000.00	2	0.372	-	-	0.000	186,000.00	2	0.372
1.1.2) MR404 UHF/ VHF Antenna Upgrade (3)	-	-	0.000	750,000.00	2	1.500	825,000.00	2	1.650	875,000.00	2	1.750	-	-	0.000	875,000.00	2	1.750
1.1.3) MR408 COMM System Upgrade	500,000.00	2	1.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) MR440 UHF/ VHF Transceiver Replacement (4)	44,037.04	81	3.567	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) MR445 Emergency Communication System (ECS) Upgrade (5)	445,600.00	10	4.456	469,000.00	5	2.345	478,000.00	2	0.956	-	-	0.000	-	-	0.000	-	-	0.000
1.1.7) MR520 OCS/ ECS ATC Recorder Upgrade (6)	-	-	0.000	-	-	0.000	82,888.89	9	0.746	84,615.38	13	1.100	-	-	0.000	84,615.38	13	1.100
1.1.8) MR530 FOCIS Upgrade (7)	-	-	0.000	-	-	0.000	107,000.00	5	0.535	109,000.00	3	0.327	-	-	0.000	109,000.00	3	0.327
Subtotal: Recurring Cost	-	-	*9.563*	-	-	*4.518*	-	-	*5.193*	-	-	*3.549*	-	-	*0.000*	-	-	*3.549*
Subtotal: Hardware - Fleet ATC - Hardware Cost	**-**	**-**	***9.563***	**-**	**-**	***4.518***	**-**	**-**	***5.193***	**-**	**-**	***3.549***	**-**	**-**	***0.000***	**-**	**-**	***3.549***

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Item Number / Title [DODIC]: 2 / Fleet Air Traffic Control Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Support - Other Cost																		
2.1) Fleet ATC Integrated Logistics Support (MR800)	-	-	0.363	-	-	0.254	-	-	0.269	-	-	0.274	-	-	0.000	-	-	0.274
2.2) Fleet ATC Production Engineering (MR830)	-	-	0.934	-	-	0.789	-	-	0.896	-	-	0.911	-	-	0.000	-	-	0.911
2.3) Fleet ATC Installs	-	-	4.215	-	-	1.556	-	-	3.798	-	-	3.867	-	-	0.000	-	-	3.867
Subtotal: Support - Other Cost	***-***	***-***	***5.512***	***-***	***-***	***2.599***	***-***	***-***	***4.963***	***-***	***-***	***5.052***	***-***	***-***	***0.000***	***-***	***-***	***5.052***
Gross/Weapon System Cost	**-**	**-**	**15.075**	**-**	**-**	**7.117**	**-**	**-**	**10.156**	**-**	**-**	**8.601**	**-**	**-**	**0.000**	**-**	**-**	**8.601**

Footnotes:

(2) MR069: This program provides for the procurement and or modification of critically needed communications, radar, displays, data processors and other electronic systems / equipment at Navy / Marine Corps Air Traffic Control facilities worldwide. Due to the variety of the Air Traffic Control systems involved and the scope of these validated requirements, costs can vary significantly between fiscal years. The unit cost for an individual OCIR can range from $1,500 to $500,000 so the unit cost is and average of all OCIRs procured in that year and as such will fluctuate from year to year.

(3) MR404: UHF/VHF Antenna Upgrade - UHF/VHF antennas enable ground to air communications between air traffic controllers and aircraft pilots. New antenna and antenna cables are required to replace existing aged and deteriorated antennas and cables. For dependable ground to air communications, replacement of the antennas and cables is imperative. Inventory objective is 62.

(4) MR440: Inventory objective is 330. 249 units procured prior to FY17 under BLI 2845.

(5) MR445: Inventory objective is 45. 28 Units procured prior to FY17 under BLI 2845.

(6) MR520: The Operational Communication System (OCS) and Emergency Communication System (ECS) Air Traffic Control (ATC) recorder upgrade through participation in the Federal Aviation Administration (FAA) ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology. FY2020 represents a new FAA recorder. The size of the recorders will vary significantly. The ECS recorder will have 10 channels and the OCS recorders will vary between 32 and 260 channels. Procurements will not begin until FY2020 due to the FAA-delayed qualifying hardware NAS in-service decision until FY2020.

(7) MR530: Fiber Optic Communications Intersite System (FOCIS) Upgrade Program- This program modernizes obsolete and unsupportable FOCIS equipment with modern supportable components. Inventory objective is 44.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Item Number / Title [DODIC]: 3 / Landing Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	4.465	4.452	4.457	7.079	0.000	7.079
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	4.465	4.452	4.457	7.079	0.000	7.079
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**4.465**	**4.452**	**4.457**	**7.079**	**0.000**	**7.079**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - Landing Systems - TACAN Beacon Cost																		
Recurring Cost																		
1.1.1) X1042 - TACAN BEACON UPGRADE (8)	217,000.00	14	3.038	211,857.14	14	2.966	211,857.14	14	2.966	212,500.00	24	5.100	-	-	0.000	212,500.00	24	5.100
Subtotal: Recurring Cost	-	-	*3.038*	-	-	*2.966*	-	-	*2.966*	-	-	*5.100*	-	-	*0.000*	-	-	*5.100*
Subtotal: Hardware - Landing Systems - TACAN Beacon Cost	**-**	**-**	***3.038***	**-**	**-**	***2.966***	**-**	**-**	***2.966***	**-**	**-**	***5.100***	**-**	**-**	***0.000***	**-**	**-**	***5.100***
Support - Other Cost																		
2.1) X1800 - Landing Systems Integrated Logistics Support	-	-	0.033	-	-	0.037	-	-	0.037	-	-	0.042	-	-	0.000	-	-	0.042
2.2) X1830 - Landing Systems Production Engineering	-	-	0.419	-	-	0.280	-	-	0.280	-	-	0.620	-	-	0.000	-	-	0.620
2.3) X1840 - Landing Systems Quality Assurance	-	-	0.000	-	-	0.037	-	-	0.037	-	-	0.039	-	-	0.000	-	-	0.039
2.4) X1900 - Landing System Installs	-	-	0.975	-	-	1.132	-	-	1.137	-	-	1.278	-	-	0.000	-	-	1.278
Subtotal: Support - Other Cost	**-**	**-**	***1.427***	**-**	**-**	***1.486***	**-**	**-**	***1.491***	**-**	**-**	***1.979***	**-**	**-**	***0.000***	**-**	**-**	***1.979***
Gross/Weapon System Cost	**-**	**-**	**4.465**	**-**	**-**	**4.452**	**-**	**-**	**4.457**	**-**	**-**	**7.079**	**-**	**-**	**0.000**	**-**	**-**	**7.079**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Item Number / Title [DODIC]:** 3 / Landing Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(8) X1042: Inventory objective is 206. Procurement quantities increase from FY20 to FY21 to align with TACAN Antennas qty of 24 per year. This effort will reduce the overall cost of the TACAN system by gaining economies of scale savings and also reducing program installation costs by allowing all TACAN systems to be installed simultaneously. Additionally, the combined installation meets fleet demands, allowing greater operational readiness.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	6.495	2.397	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.892
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	6.495	2.397	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.892
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**6.495**	**2.397**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**8.892**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Air Traffic Navigation Integration and Coordination System (ATNAVICS) Air Surveillance Radar (ASR) Range Extension is funded to meet requirements indentified in the Air Traffic Control (ATC) Initial Capabilities Document, Marine Requirements Oversite Committee Decision Memorandum 75-7007, Marine Aviation Command and Control Operational Advisory Group and Headquarters Marine Corps APX-25 Requirement Clarification letter dated 05 Jan 2010. The gaps identified require sustainment of legacy sensor capability until such time as ATNAVICS PrePlanned Product Improvement initiatives enhance system capability to support main air base traffic density and airspace. Additionally, the positive control enabled by increased ASR range reduces separation enabling increased sortie rates. The End Item Kits for the ATNAVICS ASR Range Extension that are being procured consist of: ASR transmitter, environmental control unit/power generator, Radio Frequency transmission line, ASR receiver/exciter and signal data processors and required software code modifications to system Lowest Repairable Units.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2815.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: MATCALS	**Modification Type:** Modification	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)												
B Kits												
Non-Recurring												
1.1.1) EQUIPMENT - NonOrganic [9]	3 / 3.624	1 / 1.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 4.824
Subtotal: Non-Recurring	*- / 3.624*	*- / 1.200*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 4.824*
Subtotal: AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)	*3 / 3.624*	*1 / 1.200*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*4 / 4.824*
Subtotal: Procurement, All Modification Items	*- / 3.624*	*- / 1.200*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 4.824*
Support *(All Modification Items)*												
2.1) Integrated Logistics Support	- / 0.255	- / 0.138	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 0.393
2.2) Production Engineering	- / 1.124	- / 0.559	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 1.683
Subtotal: Support	*- / 1.379*	*- / 0.697*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.076*
Installation												
Modification Item 1 of 1: AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)	- / 1.492	- / 0.500	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.992
Subtotal: Installation	*- / 1.492*	*- / 0.500*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.992*
Total												
Total Cost (Procurement + Support + Installation)	**6.495**	**2.397**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**8.892**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)

Manufacturer Information

Manufacturer Name: Raytheon | Manufacturer Location: Marlborough, MA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018						
Delivery Dates	Jun 2019						

Installation Information

Method of Implementation: AIT:: Installation Name: EQUIPMENT

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	3 / 1.492	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.492
FY 2019	- / -	1 / 0.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.500
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 1.492	1 / 0.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 1.992

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4

Footnotes:

(9) The ASR Range Extension is in response to the HQMC APX-25 Requirement Clarification letter dated 05 Jan 2010. Inventory objective is 15. 11 procurements and 11 installs are funded under BLI 2815.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 2 / MJ465 AMTAC
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	14.746	0.000	0.000	4.664	0.000	4.664	4.749	0.000	0.000	0.000	0.000	24.159
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	14.746	0.000	0.000	4.664	0.000	4.664	4.749	0.000	0.000	0.000	0.000	24.159
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**14.746**	**0.000**	**0.000**	**4.664**	**0.000**	**4.664**	**4.749**	**0.000**	**0.000**	**0.000**	**0.000**	**24.159**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/TRN-47(V)2 Airfield Mobile TACAN (AMTAC) is a one for one replacement for the aging/obsolete AN/TRN-44A TACAN. The AN/TRN-47(V)2 AMTAC is a High Mobility Multipurpose Wheeled Vehicle (HMMWV) transportable, rapid set-up/tear-down, dual channel navigation aid, which provides TACAN-equipped aircraft with range, bearing, and non-precision approach capability.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 2 / MJ465 AMTAC
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	
Models of Systems Affected: MATCALS	Modification Type: Modification	Related RDT&E PEs:

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: MJ465 AMTAC												
B Kits												
Recurring												
2.1.1) Equipment - NonOrganic (10)	8 / 11.405	- / -	- / -	2 / 3.400	- / -	2 / 3.400	2 / 3.460	- / -	- / -	- / -	- / -	12 / 18.265
Subtotal: Recurring	*- / 11.405*	*- / -*	*- / -*	*- / 3.400*	*- / -*	*- / 3.400*	*- / 3.460*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 18.265*
Subtotal: MJ465 AMTAC	*8 / 11.405*	*- / -*	*- / -*	*2 / 3.400*	*- / -*	*2 / 3.400*	*2 / 3.460*	*- / -*	*- / -*	*- / -*	*- / -*	*12 / 18.265*
Subtotal: Procurement, All Modification Items	*- / 11.405*	*- / -*	*- / -*	*- / 3.400*	*- / -*	*- / 3.400*	*- / 3.460*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 18.265*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / 0.644	- / -	- / -	- / 0.333	- / -	- / 0.333	- / 0.340	- / -	- / -	- / -	- / -	- / 1.317
3.2) Production Engineering	- / 1.441	- / -	- / -	- / 0.602	- / -	- / 0.602	- / 0.614	- / -	- / -	- / -	- / -	- / 2.657
Subtotal: Support	*- / 2.085*	*- / -*	*- / -*	*- / 0.935*	*- / -*	*- / 0.935*	*- / 0.954*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 3.974*
Installation												
Modification Item 1 of 1: MJ465 AMTAC	- / 1.256	- / 0.000	- / 0.000	- / 0.329	- / 0.000	- / 0.329	- / 0.335	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.920
Subtotal: Installation	*- / 1.256*	*- / -*	*- / -*	*- / 0.329*	*- / -*	*- / 0.329*	*- / 0.335*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.920*
Total												
Total Cost (Procurement + Support + Installation)	**14.746**	**0.000**	**0.000**	**4.664**	**0.000**	**4.664**	**4.749**	**0.000**	**0.000**	**0.000**	**0.000**	**24.159**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 2 / MJ465 AMTAC
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: MJ465 AMTAC

Manufacturer Information

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 8

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Nov 2020	Nov 2021			
Delivery Dates			Jul 2021	Jul 2022			

Installation Information

Method of Implementation: Installation Team:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	8 / 1.256	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 1.256
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	2 / 0.329	0 / 0.000	2 / 0.329	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.329
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.335	- / -	- / -	- / -	0 / 0.000	2 / 0.335
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 1.256	- / -	- / -	2 / 0.329	0 / 0.000	2 / 0.329	2 / 0.335	- / -	- / -	- / -	0 / 0.000	12 / 1.920

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Out	8	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	12

Footnotes:

(10) Funds provided to procure 2 AMTACs in FY21 and 2 in FY22 to complete the USMC requirement of 12 systems.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 3 / CB010 - DoD Advanced Automation System (DAAS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.075	2.383	0.868	1.039	0.000	1.039	0.234	0.424	0.428	0.428	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.075	2.383	0.868	1.039	0.000	1.039	0.234	0.424	0.428	0.428	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.075**	**2.383**	**0.868**	**1.039**	**0.000**	**1.039**	**0.234**	**0.424**	**0.428**	**0.428**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The DoD Advanced Automation System (DAAS) is being developed as part of a joint DoD/Federal Aviation Administration (FAA) program to modernize and standardize Air Traffic Control (ATC) equipment in the National Airspace System. The systems are installed in Navy ATC facilities to replace aging, obsolete equipment and comply with joint DoD/FAA modernization program agreements. DAAS provides for processors and displays for tower and approach controls. Inventory objective of 47.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 3 / CB010 - DoD Advanced Automation System (DAAS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: NAS	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB010 - DoD Advanced Automation System (DAAS)												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic (11)	4 / 2.751	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.751
2.1.2) ECP/OCIR - Organic (12)	- / 1.102	- / 0.893	- / 0.868	- / 1.039	- / -	- / 1.039	- / 0.234	- / 0.424	- / 0.428	- / 0.428	Continuing	Continuing
Subtotal: Recurring	*- / 3.853*	*- / 0.893*	*- / 0.868*	*- / 1.039*	*- / -*	*- / 1.039*	*- / 0.234*	*- / 0.424*	*- / 0.428*	*- / 0.428*	*Continuing*	*Continuing*
Subtotal: CB010 - DoD Advanced Automation System (DAAS)	*4 / 3.853*	*- / 0.893*	*- / 0.868*	*- / 1.039*	*- / -*	*- / 1.039*	*- / 0.234*	*- / 0.424*	*- / 0.428*	*- / 0.428*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 3.853*	*- / 0.893*	*- / 0.868*	*- / 1.039*	*- / -*	*- / 1.039*	*- / 0.234*	*- / 0.424*	*- / 0.428*	*- / 0.428*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / 0.199	- / 0.099	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.298
3.2) Production Engineering	- / 1.134	- / 0.533	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.667
Subtotal: Support	*- / 1.333*	*- / 0.632*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.965*
Installation												
Modification Item 1 of 1: CB010 - DoD Advanced Automation System (DAAS)	- / 3.889	- / 0.858	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.747
Subtotal: Installation	*- / 3.889*	*- / 0.858*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 4.747*
Total												
Total Cost (Procurement + Support + Installation)	**9.075**	**2.383**	**0.868**	**1.039**	**0.000**	**1.039**	**0.234**	**0.424**	**0.428**	**0.428**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 3 / CB010 - DoD Advanced Automation System (DAAS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: CB010 - DoD Advanced Automation System (DAAS)

Manufacturer Information

Manufacturer Name: Raytheon | Manufacturer Location: Marlborough, MA

Administrative Leadtime *(in Months)*: 6 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: AIT:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	3 / 3.889	1 / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 4.747
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 3.889	1 / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 4.747

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4

Footnotes:

(11) DAAS - Advanced Planning (AP) costs for Installation occur 1 year prior to actual install and show as quantity zero. These upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 3 / CB010 - DoD Advanced Automation System (DAAS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(12) ECP costs are based on site unique software configurations through the rest of the FYDP. Cost increase in FY19-FY21 (compared to other years) is caused by requirement to upgrade the DAAS operating system which no longer has vendor support and upgrade the DAAS from legacy point to point analog interface capability to flexible Internet Protocol (IP) addressable interfaces. Upgrades are driven by the FAA's Surveillance Interface Modernization (SIM) program. These upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 4 / CB030 Digital Airport Surveillance Radar (DASR)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.800	0.939	0.418	0.431	0.000	0.431	0.444	0.453	0.398	0.459	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.800	0.939	0.418	0.431	0.000	0.431	0.444	0.453	0.398	0.459	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.800**	**0.939**	**0.418**	**0.431**	**0.000**	**0.431**	**0.444**	**0.453**	**0.398**	**0.459**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The DASR was developed as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The DASR has enabled Navy ATC facilities to replace aging, obsolete approach control radars and comply with joint DoD/FAA modernization program agreements. Inventory objective of 29 DASR. 29 were procured and installed prior to FY2017 were funded under BLI 2840.

The FAA DASR technical refreshment has not progressed as planned and has been reorganized into multiple Engineering Change Proposals (ECPs) to mitigate obsolescence effective FY2017. An ECP line has been added to the budget starting in FY2017 to address these upgrades.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 4 / CB030 Digital Airport Surveillance Radar (DASR)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: NAS	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB030 Digital Airport Surveillance Radar (DASR)												
B Kits												
Recurring												
1.1.2) ECP/OCIR - Organic (13)	- / 0.800	- / 0.939	- / 0.418	- / 0.431	- / -	- / 0.431	- / 0.444	- / 0.453	- / 0.398	- / 0.459	Continuing	Continuing
Subtotal: Recurring	*- / 0.800*	*- / 0.939*	*- / 0.418*	*- / 0.431*	*- / -*	*- / 0.431*	*- / 0.444*	*- / 0.453*	*- / 0.398*	*- / 0.459*	*Continuing*	*Continuing*
Subtotal: CB030 Digital Airport Surveillance Radar (DASR)	*- / 0.800*	*- / 0.939*	*- / 0.418*	*- / 0.431*	*- / -*	*- / 0.431*	*- / 0.444*	*- / 0.453*	*- / 0.398*	*- / 0.459*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.800*	*- / 0.939*	*- / 0.418*	*- / 0.431*	*- / -*	*- / 0.431*	*- / 0.444*	*- / 0.453*	*- / 0.398*	*- / 0.459*	*Continuing*	*Continuing*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**0.800**	**0.939**	**0.418**	**0.431**	**0.000**	**0.431**	**0.444**	**0.453**	**0.398**	**0.459**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 4 / CB030 Digital Airport Surveillance Radar (DASR)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CB030 Digital Airport Surveillance Radar (DASR)

Manufacturer Information

Manufacturer Name: MOOG	Manufacturer Location: Salt Lake City, UT
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Manufacturer Name: Raytheon	Manufacturer Location: Marlborough, MA
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Footnotes:

(13) The Digital Airport Surveillance Radar (DASR) ECP/OCIR upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System. The Digital Airport Surveillance Radar (DASR) will be upgraded from legacy point to point analog interface capability to flexible Internet Protocol (IP) addressable interfaces.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 5 / CB040 Tower Automation System (TAS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.400	1.142	1.654	1.361	0.000	1.361	0.319	0.325	0.238	0.238	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.400	1.142	1.654	1.361	0.000	1.361	0.319	0.325	0.238	0.238	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.400**	**1.142**	**1.654**	**1.361**	**0.000**	**1.361**	**0.319**	**0.325**	**0.238**	**0.238**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The TAS was developed as part of a joint DoD)/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The TAS has enabled Navy ATC facilities to replace aging, obsolete equipment and comply with joint DoD/FAA modernization program agreements.

This effort includes Engineering Change Proposal (ECP) efforts directly related to the TAS Tech Refresh efforts detailed in cost element CB070 of this budget. The ECP introduces new capability into a common workstation that eliminates a separate visual communications alert indicator. The nature of that consolidation creates an interdependency with CB070; which addresses severe obsolescence issues that render the current workstation configuration unsupportable. Both software and hardware for these two cost elements overlap and require concurrent efforts. Delay or interruption to either CB040 and/or CB070 causes a break in fleet capability and negatively impacts both flight safety and operator workload. All Windows based operating systems in Air Traffic Control Towers are being upgraded to Windows 10 in order to meet DoD's Information Assurance / Cyber security requirements.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 5 / CB040 Tower Automation System (TAS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: NAS	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB040 Tower Automation System (TAS)												
B Kits												
Recurring												
1.1.1) ECP/OCIR - Organic (14)	- / 0.400	- / 1.142	- / 1.654	- / 1.361	- / -	- / 1.361	- / 0.319	- / 0.325	- / 0.238	- / 0.238	Continuing	Continuing
Subtotal: Recurring	*- / 0.400*	*- / 1.142*	*- / 1.654*	*- / 1.361*	*- / -*	*- / 1.361*	*- / 0.319*	*- / 0.325*	*- / 0.238*	*- / 0.238*	*Continuing*	*Continuing*
Subtotal: CB040 Tower Automation System (TAS)	*- / 0.400*	*- / 1.142*	*- / 1.654*	*- / 1.361*	*- / -*	*- / 1.361*	*- / 0.319*	*- / 0.325*	*- / 0.238*	*- / 0.238*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.400*	*- / 1.142*	*- / 1.654*	*- / 1.361*	*- / -*	*- / 1.361*	*- / 0.319*	*- / 0.325*	*- / 0.238*	*- / 0.238*	*Continuing*	*Continuing*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**0.400**	**1.142**	**1.654**	**1.361**	**0.000**	**1.361**	**0.319**	**0.325**	**0.238**	**0.238**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 5 / CB040 Tower Automation System (TAS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Modification Item 1 of 1: CB040 Tower Automation System (TAS)		

Manufacturer Information

Manufacturer Name: Spawar Systems Center Atlantic	Manufacturer Location: Charleston, SC
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Footnotes:

(14) Support costs are included in the ECP/OCIR lines.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 6 / CB050 STARS TECH Refresh Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	25.622	11.582	2.682	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	39.886
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	25.622	11.582	2.682	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	39.886
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**25.622**	**11.582**	**2.682**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**39.886**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Standard Terminal Automation Replacement System (STARS) is a joint (DoD) and Department of Transportation FAA program to modernize terminal air traffic control automation systems. The STARS contract was awarded by the FAA on September 16, 1996, and ends September 30, 2017. The FAA anticipates the award of a contract for system maintenance, system technical refresh, and system enhancements through fiscal year 2019. The FAA began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information in place of ground-based radar. The DoD version of STARS DAAS must be upgraded to meet this requirement. Inventory objective is 38.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 6 / CB050 STARS TECH Refresh Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: NAS	**Modification Type:** AIT	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB050 STARS TECH Refresh Upgrade												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic (15)	19 / 20.466	6 / 8.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 28.585
Subtotal: Recurring	*- / 20.466*	*- / 8.119*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 28.585*
Subtotal: CB050 STARS TECH Refresh Upgrade	*19 / 20.466*	*6 / 8.119*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*25 / 28.585*
Subtotal: Procurement, All Modification Items	*- / 20.466*	*- / 8.119*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 28.585*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / 0.300	- / 0.150	- / 0.153	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.603
3.2) Production Engineering	- / 1.030	- / 0.590	- / 0.549	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.169
Subtotal: Support	*- / 1.330*	*- / 0.740*	*- / 0.702*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.772*
Installation												
Modification Item 1 of 1: CB050 STARS TECH Refresh Upgrade	- / 3.826	- / 2.723	- / 1.980	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.529
Subtotal: Installation	*- / 3.826*	*- / 2.723*	*- / 1.980*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.529*
Total												
Total Cost (Procurement + Support + Installation)	**25.622**	**11.582**	**2.682**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**39.886**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 6 / CB050 STARS TECH Refresh Upgrade

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: CB050 STARS TECH Refresh Upgrade

Manufacturer Information

Manufacturer Name: Raytheon | Manufacturer Location: Marlborough, MA

Administrative Leadtime *(in Months)*: 6 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019						
Delivery Dates	Mar 2020						

Installation Information

Method of Implementation: AIT:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	11 / 3.826	8 / 2.723	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	19 / 6.549
FY 2019	- / -	- / -	6 / 1.980	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 1.980
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	11 / 3.826	8 / 2.723	6 / 1.980	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	25 / 8.529

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	11	-	3	3	2	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Out	11	-	-	4	4	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25

Footnotes:

(15) This effort was previously funded in BLI 2840. Support cost fluctuations are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements. (3) Installation costs fluctuate based on location of installation and the tailoring of systems to meet Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 7 / CB070 TAS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	6.570	4.347	4.716	1.607	0.000	1.607	0.000	0.000	0.000	0.000	0.000	17.240
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	6.570	4.347	4.716	1.607	0.000	1.607	0.000	0.000	0.000	0.000	0.000	17.240
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**6.570**	**4.347**	**4.716**	**1.607**	**0.000**	**1.607**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**17.240**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Tower Automation Systems have been fielded since 2001 and are experiencing obsolescence and Information Assurance (IA) issues. These upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAA's Next Generation (NextGen) Air Transporation System initiatives. Additionally, these upgrades will enhance system performance to provide Common Access Card utilization, multi-source weather reporting and Tactical Air Control Navigation (TACAN) control. In order to achieve the modernization of the National Air Space (NAS) envisioned by NextGen, the FAA is developing a Terminal Flight Data Management (TFDM) platform that integrates flight data systems and decision support tools. The TFDM program is an integrated approach to maximize the efficient collection, distribution, and update of data and improve access to information necessary for the safe and efficient control of air traffic. The TAS will be upgraded to be consistent with the FAA TFDM.

This effort includes TAS Tech Refresh efforts directly related to the Engineering Change Proposal (ECP) efforts detailed in cost element CB040 of this budget. The ECP introduces new capability into a common workstation that eliminates a separate visual communications (VISCOM) alert indicator. The nature of that consolidation creates an interdependency with CB040; which addresses severe obsolescence issues that render the current workstation configuration unsupportable. Both software and hardware for these two cost elements overlap and require concurrent efforts. Delay or interruption to either CB040 and/or CB070 causes a break in fleet capability and negatively impacts both flight safety and operator workload.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 7 / CB070 TAS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: NAS	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB070 TAS Tech Refresh												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic (16)	31 / 2.374	18 / 2.862	7 / 1.127	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	56 / 6.363
Subtotal: Recurring	*- / 2.374*	*- / 2.862*	*- / 1.127*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 6.363*
Subtotal: CB070 TAS Tech Refresh	*31 / 2.374*	*18 / 2.862*	*7 / 1.127*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*56 / 6.363*
Subtotal: Procurement, All Modification Items	*- / 2.374*	*- / 2.862*	*- / 1.127*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 6.363*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support (17)	- / 0.271	- / 0.124	- / 0.105	- / 0.106	- / -	- / 0.106	- / -	- / -	- / -	- / -	- / -	- / 0.606
3.2) Production Engineering	- / 0.786	- / 0.421	- / 0.249	- / 0.188	- / -	- / 0.188	- / -	- / -	- / -	- / -	- / -	- / 1.644
Subtotal: Support	*- / 1.057*	*- / 0.545*	*- / 0.354*	*- / 0.294*	*- / -*	*- / 0.294*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.250*
Installation												
Modification Item 1 of 1: CB070 TAS Tech Refresh	- / 3.139	- / 0.940	- / 3.235	- / 1.313	- / 0.000	- / 1.313	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.627
Subtotal: Installation	*- / 3.139*	*- / 0.940*	*- / 3.235*	*- / 1.313*	*- / -*	*- / 1.313*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.627*
Total												
Total Cost (Procurement + Support + Installation)	**6.570**	**4.347**	**4.716**	**1.607**	**0.000**	**1.607**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**17.240**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 7 / CB070 TAS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CB070 TAS Tech Refresh

Manufacturer Information

Manufacturer Name: Pen-Tech	Manufacturer Location: Charleston, SC
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020					
Delivery Dates	Mar 2020	Mar 2021					

Installation Information

Method of Implementation: AIT:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	26 / 3.139	5 / 0.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	31 / 4.079
FY 2019	- / -	- / -	18 / 3.235	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	18 / 3.235
FY 2020	- / -	- / -	- / -	7 / 1.313	0 / 0.000	7 / 1.313	- / -	- / -	- / -	- / -	0 / 0.000	7 / 1.313
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	26 / 3.139	5 / 0.940	18 / 3.235	7 / 1.313	0 / 0.000	7 / 1.313	- / -	- / -	- / -	- / -	0 / 0.000	56 / 8.627

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	26	-	2	3	-	-	9	9	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56
Out	26	-	-	2	3	-	-	9	9	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56

Footnotes:

(16) Inventory objective is 63. 23 procurements and 7 installations were funded prior to FY2017 and are funded on BLI 2840. Installation of FY2016 End Item procurements (qty 16) will be funded with FY2017 funding. Increase in inventory objective due to addition of 5 outlying fields of parent facilities not included in initial inventory objective that require the TAS Tech Refresh. Installation cost fluctuation are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility, and Marine Corps Air Station Mission requirements.

(17) Support cost fluctuations are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 8 / CB080 NAS Voice System (NVS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	13.858	6.589	8.374	10.266	0.000	10.266	10.558	7.503	6.788	12.650	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13.858	6.589	8.374	10.266	0.000	10.266	10.558	7.503	6.788	12.650	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13.858**	**6.589**	**8.374**	**10.266**	**0.000**	**10.266**	**10.558**	**7.503**	**6.788**	**12.650**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FAA NAS Voice System(NVS) is a forward-looking program to replace national airspace system (NAS) voice switches and radios with a new technology system capable of supporting future requirements for the NextGen. Many of these switches are experiencing increasing obsolescence and failures and are in need of replacement. They are not capable of supporting flexible reallocation of access to communications resources, and lack security needed for a network-based communications infrastructure, which is a key concept in modernization of the NAS. The NVS program will provide a key transitional element in the air traffic control voice communications infrastructure as it moves toward realizing the FAAs NextGen vision and a more operationally efficient and economic NAS.

Radios: There are 75 sites which will receive a total of 4,498 radios. The sites to receive radios include FACSFACs remote sites at Naval and Marine Corps Air Stations. The number of radios per site varies due to operational requirements and the number of aircraft serviced.

Voice Switches: There are two specific types of Voice Switches being procured: Operational Communication System (OCS) and Emergency Control System (ECS): 56 OCS Voice Switches, 42 ECS Voice Switches.

42 Sites will receive both an OCS Voice Switch and an ECS Voice Switch, 14 sites will receive only an OCS voice switch. While FACSFAC remote sites are equipped with radios, they are not equipped with Voice Switches.

Procurement of the Voice Switch Radios has been delayed until 2025. These items are procured through an FAA contract. The FAA has delayed procurement of these radios due to recent failures with prototype testing.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 8 / CB080 NAS Voice System (NVS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: NAS	**Modification Type:** Added Capability	**Related RDT&E PEs:** 0604504N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB080 NAS Voice System (NVS)												
B Kits												
Recurring												
2.1.2) End Item: Radios - NonOrganic [18]	1,544 / 10.682	497 / 4.519	574 / 5.314	669 / 6.543	- / -	669 / 6.543	650 / 6.500	291 / 3.201	291 / 3.201	- / -	- / -	4,516 / 39.960
2.1.3) End Item: OCS Voice Switch - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 8.400	50 / 82.343	56 / 90.743
2.1.4) End Item: ECS Voice Switch - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.100	36 / 16.106	42 / 18.206
Subtotal: Recurring	*- / 10.682*	*- / 4.519*	*- / 5.314*	*- / 6.543*	*- / -*	*- / 6.543*	*- / 6.500*	*- / 3.201*	*- / 3.201*	*- / 10.500*	*- / 98.449*	*- / 148.909*
Subtotal: CB080 NAS Voice System (NVS)	*1,544 / 10.682*	*497 / 4.519*	*574 / 5.314*	*669 / 6.543*	*- / -*	*669 / 6.543*	*650 / 6.500*	*291 / 3.201*	*291 / 3.201*	*12 / 10.500*	*86 / 98.449*	*4,614 / 148.909*
Subtotal: Procurement, All Modification Items	*- / 10.682*	*- / 4.519*	*- / 5.314*	*- / 6.543*	*- / -*	*- / 6.543*	*- / 6.500*	*- / 3.201*	*- / 3.201*	*- / 10.500*	*- / 98.449*	*- / 148.909*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / 0.400	- / 0.200	- / 0.260	- / 0.200	- / -	- / 0.200	- / 0.220	- / 0.220	- / 0.218	- / 0.320	Continuing	Continuing
3.2) Production Engineering [19]	- / 0.753	- / 0.447	- / 0.642	- / 0.706	- / -	- / 0.706	- / 0.777	- / 0.855	- / 0.940	- / 1.102	Continuing	Continuing
Subtotal: Support	*- / 1.153*	*- / 0.647*	*- / 0.902*	*- / 0.906*	*- / -*	*- / 0.906*	*- / 0.997*	*- / 1.075*	*- / 1.158*	*- / 1.422*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: CB080 NAS Voice System (NVS)	- / 2.023	- / 1.423	- / 2.158	- / 2.817	- / 0.000	- / 2.817	- / 3.061	- / 3.227	- / 2.429	- / 0.728	- / 59.700	- / 77.566
Subtotal: Installation	*- / 2.023*	*- / 1.423*	*- / 2.158*	*- / 2.817*	*- / -*	*- / 2.817*	*- / 3.061*	*- / 3.227*	*- / 2.429*	*- / 0.728*	*- / 59.700*	*- / 77.566*
Total												
Total Cost (Procurement + Support + Installation)	**13.858**	**6.589**	**8.374**	**10.266**	**0.000**	**10.266**	**10.558**	**7.503**	**6.788**	**12.650**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 8 / CB080 NAS Voice System (NVS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CB080 NAS Voice System (NVS)

Manufacturer Information

Manufacturer Name: General Dynamics	Manufacturer Location: Scottsdale, Arizona
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025	Mar 2026

Installation Information

Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: Radios

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	926 / 2.023	618 / 1.023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1,544 / 3.046
FY 2019	- / -	0 / 0.400	497 / 1.250	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	497 / 1.650
FY 2020	- / -	- / -	0 / 0.908	574 / 1.262	0 / 0.000	574 / 1.262	- / -	- / -	- / -	- / -	0 / 0.000	574 / 2.170
FY 2021	- / -	- / -	- / -	0 / 1.555	0 / 0.000	0 / 1.555	669 / 1.606	- / -	- / -	- / -	0 / 0.000	669 / 3.161
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.455	650 / 1.606	- / -	- / -	0 / 0.000	650 / 3.061
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.621	291 / 0.727	- / -	0 / 0.000	291 / 2.348
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.702	291 / 0.728	0 / 0.000	291 / 2.430
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	926 / 2.023	618 / 1.423	497 / 2.158	574 / 2.817	0 / 0.000	574 / 2.817	669 / 3.061	650 / 3.227	291 / 2.429	291 / 0.728	0 / 0.000	4,516 / 17.866

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	926	-	206	206	206	-	167	166	164	-	192	192	190	-	223	223	223	-	222	223	205	-	97	97	97	-	97	97	97	-	4,516
Out	926	-	-	309	309	-	-	250	247	-	-	292	282	-	-	334	335	-	-	334	316	-	-	145	146	-	97	97	97	-	4,516

Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: OCS Voice Switch

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 8 / CB080 NAS Voice System (NVS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CB080 NAS Voice System (NVS)

Installation Information

Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: OCS Voice Switch

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 5.570	6 / 5.570
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	50 / 46.630	50 / 46.630
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	56 / 52.200	56 / 52.200

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	56
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	56

Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: ECS Voice Switch

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.070	6 / 1.070
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	36 / 6.430	36 / 6.430
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 7.500	42 / 7.500

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 8 / CB080 NAS Voice System (NVS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CB080 NAS Voice System (NVS)

Installation Information

Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: ECS Voice Switch

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	42
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	42

Footnotes:

(18) End Item costs are based on current FAA contract pricing. Inventory objective is 4,516. Advanced Planning (AP) costs for installation occur 1 year prior to actual install and show as quantity zero

(19) FY2021 increase in production engineering is to account for increased costs anticipated for site prep design as the older sites receive the radio upgrades.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 9 / CB090 - DAAS Tech Refresh Upgrade II
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.652	0.000	0.652	3.567	7.210	6.191	6.750	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.652	0.000	0.652	3.567	7.210	6.191	6.750	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.652**	**0.000**	**0.652**	**3.567**	**7.210**	**6.191**	**6.750**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Standard Terminal Automation Replacement System (STARS) is a joint (DoD) and Department of Transportation Federal Aviation Administration (FAA) program to modernize terminal air traffic control systems. The DoD version of STARS, DoD Advanced Automation System (DAAS), must be upgraded to ensure continued compliance with FAA NextGen requirements in order to continue participation in the National Airspace System (NAS). Currently fielded STARS COTS equipment/software are experiencing obsolescence and information assurance (IA) issues. The DAAS Tech Refresh Upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAA's Next Generation (NextGen) Air Transportation System initiatives. Inventory objective is 40.

The DAAS Tech Refresh Upgrade II efforts will implement Engineering Change Proposals (ECPs) defined under cost element CB010 (DoD Advanced Automation System (DAAS)) of this budget. The nature of this consolidation creates an interdependency between CB010 and CB090 that addresses obsolescence and IA issues that render the current hardware and software unsupportable. Both hardware and software for these two cost elements overlap requiring concurrent efforts. Delay or interruption to either CB010 and /or CB090 causes a break in fleet capability and negatively impacts both safety of flight and Air Traffic Controller workload. CB090 is a follow-on to CB050 (STARS Tech Refresh Upgrade) which will complete procurements in FY20.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 9 / CB090 - DAAS Tech Refresh Upgrade II
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB090 - DAAS Tech Refresh Upgrade II												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.723	4 / 5.181	3 / 3.443	3 / 4.505	28 / 37.865	40 / 53.717
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.723*	*- / 5.181*	*- / 3.443*	*- / 4.505*	*- / 37.865*	*- / 53.717*
Subtotal: CB090 - DAAS Tech Refresh Upgrade II	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*2 / 2.723*	*4 / 5.181*	*3 / 3.443*	*3 / 4.505*	*28 / 37.865*	*40 / 53.717*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.723*	*- / 5.181*	*- / 3.443*	*- / 4.505*	*- / 37.865*	*- / 53.717*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.163	- / 0.166	- / 0.170	- / 0.175	Continuing	Continuing
3.2) Production Engineering (20)	- / -	- / -	- / -	- / 0.652	- / -	- / 0.652	- / 0.681	- / 0.793	- / 0.398	- / 0.405	Continuing	Continuing
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / 0.652*	*- / -*	*- / 0.652*	*- / 0.844*	*- / 0.959*	*- / 0.568*	*- / 0.580*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: CB090 - DAAS Tech Refresh Upgrade II	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.070	- / 2.180	- / 1.665	- / 20.196	- / 25.111
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.070*	*- / 2.180*	*- / 1.665*	*- / 20.196*	*- / 25.111*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.652**	**0.000**	**0.652**	**3.567**	**7.210**	**6.191**	**6.750**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 9 / CB090 - DAAS Tech Refresh Upgrade II

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: CB090 - DAAS Tech Refresh Upgrade II

Manufacturer Information

Manufacturer Name: TBD — Manufacturer Location: TBD

Administrative Leadtime *(in Months)*: 4 — Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				Jan 2022	Jan 2023	Jan 2024	
Delivery Dates				Jan 2023	Jan 2024	Jan 2025	

Manufacturer Name: TBD — Manufacturer Location: TBD

Administrative Leadtime *(in Months)*: 0 — Production Leadtime *(in Months)*: 0

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: [none specified]:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.070	- / -	- / -	0 / 0.000	2 / 1.070
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.180	- / -	0 / 0.000	4 / 2.180
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.665	0 / 0.000	3 / 1.665
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.710	3 / 1.710
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	28 / 18.486	28 / 18.486
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.070	4 / 2.180	3 / 1.665	31 / 20.196	40 / 25.111

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 9 / CB090 - DAAS Tech Refresh Upgrade II

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: CB090 - DAAS Tech Refresh Upgrade II

Installation Information

Method of Implementation: [none specified]:: Installation Name: End Item

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2	-	-	1	2	-	31	40
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2	-	-	1	2	-	31	40

Footnotes:

(20) Production Engineering costs beginning in FY21 include identifying projected system requirements, modifications adjustments, preparation for integrating planning, and drawing support efforts. Preparing for the receipt, integration, and installation of future, identified equipment often requires significant planning.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 10 / CB100 TAS Tech Refresh Upgrade II
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.600	7.065	14.000	0.000	14.000	11.931	10.585	10.675	4.924	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.600	7.065	14.000	0.000	14.000	11.931	10.585	10.675	4.924	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.600**	**7.065**	**14.000**	**0.000**	**14.000**	**11.931**	**10.585**	**10.675**	**4.924**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/FYC-22 Visual Information Display System (VIDS) is the Navy developed/owned system that meets the NAS Mod Tower Automation System (TAS) requirements. The Tower Automation System (TAS) COTS equipment is suffering from obsolescence and Information Assurance (IA) issues. The TAS Tech Refresh Upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAAs Next Generation (NextGen) Air Transportation System initiatives. In order to achieve the modernization of the National Airspace System envisioned by NextGen, the FAA is developing a Terminal Flight Data Management (TFDM) platform that integrates flight data systems and decision tools. The TFDM program is an integrated approach to maximize the efficient collection, distribution, and update of data and improve access to information necessary for the safe and efficient control of air traffic. The TAS will be upgraded to be consistent with the FAA TFDM. The inventory objective is 56.

The TAS Tech Refresh Upgrade II efforts will implement Engineering Change Proposals (ECPs) defined under cost element CB040 (Tower Automation System (TAS)) of this budget. The nature of this consolidation creates an interdependency between CB040 and CB100 that addresses obsolescence and IA issues that render the current hardware and software unsupportable. Both hardware and software for these two cost elements overlap requiring concurrent efforts. Delay or interruption to either CB040 and /or CB100 causes a break in fleet capability and negatively impacts both safety of flight and Air Traffic Controller workload. CB100 is a follow-on to CB070 (TAS Tech Refresh) which will complete procurements in FY20

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 10 / CB100 TAS Tech Refresh Upgrade II
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB100 TAS Tech Refresh Upgrade II												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic	- / -	- / -	9 / 5.715	16 / 10.352	- / -	16 / 10.352	10 / 6.520	10 / 6.600	10 / 6.650	1 / 0.732	- / -	56 / 36.569
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 5.715*	*- / 10.352*	*- / -*	*- / 10.352*	*- / 6.520*	*- / 6.600*	*- / 6.650*	*- / 0.732*	*- / 0.000*	*- / 36.569*
Subtotal: CB100 TAS Tech Refresh Upgrade II	*- / -*	*- / -*	*9 / 5.715*	*16 / 10.352*	*- / -*	*16 / 10.352*	*10 / 6.520*	*10 / 6.600*	*10 / 6.650*	*1 / 0.732*	*- / -*	*56 / 36.569*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 5.715*	*- / 10.352*	*- / -*	*- / 10.352*	*- / 6.520*	*- / 6.600*	*- / 6.650*	*- / 0.732*	*- / 0.000*	*- / 36.569*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / -	- / -	- / 0.325	- / 0.355	- / -	- / 0.355	- / 0.301	- / 0.286	- / 0.255	- / 0.205	Continuing	Continuing
3.2) Production Engineering	- / -	- / 0.600	- / 1.025	- / 1.043	- / -	- / 1.043	- / 1.030	- / 1.049	- / 1.070	- / 1.017	Continuing	Continuing
Subtotal: Support	*- / 0.000*	*- / 0.600*	*- / 1.350*	*- / 1.398*	*- / -*	*- / 1.398*	*- / 1.331*	*- / 1.335*	*- / 1.325*	*- / 1.222*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: CB100 TAS Tech Refresh Upgrade II	- / 0.000	- / 0.000	- / 0.000	- / 2.250	- / 0.000	- / 2.250	- / 4.080	- / 2.650	- / 2.700	- / 2.970	- / 0.300	- / 14.950
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 2.250*	*- / -*	*- / 2.250*	*- / 4.080*	*- / 2.650*	*- / 2.700*	*- / 2.970*	*- / 0.300*	*- / 14.950*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.600**	**7.065**	**14.000**	**0.000**	**14.000**	**11.931**	**10.585**	**10.675**	**4.924**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 10 / CB100 TAS Tech Refresh Upgrade II
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CB100 TAS Tech Refresh Upgrade II

Manufacturer Information

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	
Delivery Dates		Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025	

Installation Information

Method of Implementation: [none specified]:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	9 / 2.250	0 / 0.000	9 / 2.250	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.250
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	16 / 4.080	- / -	- / -	- / -	0 / 0.000	16 / 4.080
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.650	- / -	- / -	0 / 0.000	10 / 2.650
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.700	- / -	0 / 0.000	10 / 2.700
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.970	0 / 0.000	10 / 2.970
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.300	1 / 0.300
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	9 / 2.250	0 / 0.000	9 / 2.250	16 / 4.080	10 / 2.650	10 / 2.700	10 / 2.970	1 / 0.300	56 / 14.950

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	5	4	-	-	8	8	-	-	5	5	-	-	5	5	-	-	5	5	1	56
Out	-	-	-	-	-	-	-	-	-	-	-	5	4	-	-	8	8	-	-	5	5	-	-	5	5	-	-	5	5	1	56

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 11 / CB110 DASR Tech Refresh Upgrade III
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.505	0.000	0.505	3.022	2.771	4.337	4.873	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.505	0.000	0.505	3.022	2.771	4.337	4.873	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.505**	**0.000**	**0.505**	**3.022**	**2.771**	**4.337**	**4.873**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/GPN-30 DASR was developed by the Air Force as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The DASR replaced aging, obsolete approach control radars and complies with joint DoD/FAA modernization program agreements.

The DASR Tech Refresh Upgrade III efforts will implement Engineering Change Proposals (ECPs) developed by the Air Force /FAA that address urgent and critical obsolescence issues associated with DASR subassemblies (including Commercial Off-The-Shelf (COTS) interface and control assemblies) and closure of discrepancy items from DASR Tech Refresh Segment 2.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 11 / CB110 DASR Tech Refresh Upgrade III
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CB110 DASR Tech Refresh Upgrade III												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.375	2 / 0.969	7 / 3.462	5 / 2.643	9 / 6.426	28 / 15.875
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.375*	*- / 0.969*	*- / 3.462*	*- / 2.643*	*- / 6.426*	*- / 15.875*
Subtotal: CB110 DASR Tech Refresh Upgrade III	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*5 / 2.375*	*2 / 0.969*	*7 / 3.462*	*5 / 2.643*	*9 / 6.426*	*28 / 15.875*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.375*	*- / 0.969*	*- / 3.462*	*- / 2.643*	*- / 6.426*	*- / 15.875*
Support *(All Modification Items)*												
3.1) Integrated Logistics Support	- / -	- / -	- / -	- / 0.150	- / -	- / 0.150	- / 0.247	- / 0.259	- / 0.073	- / 0.100	- / -	- / 0.829
3.2) Production Engineering	- / -	- / -	- / -	- / 0.355	- / -	- / 0.355	- / 0.400	- / 0.418	- / 0.332	- / 0.310	Continuing	Continuing
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / 0.505*	*- / -*	*- / 0.505*	*- / 0.647*	*- / 0.677*	*- / 0.405*	*- / 0.410*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: CB110 DASR Tech Refresh Upgrade III	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.125	- / 0.470	- / 1.820	- / 4.000	- / 7.415
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.125*	*- / 0.470*	*- / 1.820*	*- / 4.000*	*- / 7.415*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.505**	**0.000**	**0.505**	**3.022**	**2.771**	**4.337**	**4.873**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 11 / CB110 DASR Tech Refresh Upgrade III

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: CB110 DASR Tech Refresh Upgrade III

Installation Information

Method of Implementation: [none specified]:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.125	- / -	- / -	0 / 0.000	5 / 1.125
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.470	- / -	0 / 0.000	2 / 0.470
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.820	0 / 0.000	7 / 1.820
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.400	5 / 1.400
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 2.600	9 / 2.600
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.125	2 / 0.470	7 / 1.820	14 / 4.000	28 / 7.415

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	1	1	1	2	2	2	14	28
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	1	1	1	2	2	2	14	28

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 12 / X1036 AN/FPN-63 PAR TECH REFRESH
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	20.263	12.212	12.290	12.523	0.000	12.523	12.668	12.901	13.049	10.582	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	20.263	12.212	12.290	12.523	0.000	12.523	12.668	12.901	13.049	10.582	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**20.263**	**12.212**	**12.290**	**12.523**	**0.000**	**12.523**	**12.668**	**12.901**	**13.049**	**10.582**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This Engineering Change Proposal (ECP) constitutes Block 2 and 3 of the Service Life Extension Program for the AN/FPN-63. It will extend the service life to at least 2025 by replacing obsolete receiver/ transmitter assemblies, radar video processors, and controller displays with state-of-the-art assemblies/displays. This upgrade will also correct numerous human factors issues. This ECP will be accomplished on 36 deployed AN/FPN-63 Precision Approach Radar (PAR) Systems.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 12 / X1036 AN/FPN-63 PAR TECH REFRESH
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore Sites	**Modification Type:** Reliability	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: X1036 AN/FPN-63 PAR TECH REFRESH												
B Kits												
Recurring												
1.1.1) X1036 - PAR Tech Refresh - NonOrganic (21)	9 / 8.911	3 / 8.285	3 / 8.300	3 / 8.466	- / -	3 / 8.466	3 / 8.468	3 / 8.540	3 / 8.589	2 / 6.066	11 / 33.363	40 / 98.988
Subtotal: Recurring	*- / 8.911*	*- / 8.285*	*- / 8.300*	*- / 8.466*	*- / -*	*- / 8.466*	*- / 8.468*	*- / 8.540*	*- / 8.589*	*- / 6.066*	*- / 33.363*	*- / 98.988*
Subtotal: X1036 AN/FPN-63 PAR TECH REFRESH	*9 / 8.911*	*3 / 8.285*	*3 / 8.300*	*3 / 8.466*	*- / -*	*3 / 8.466*	*3 / 8.468*	*3 / 8.540*	*3 / 8.589*	*2 / 6.066*	*11 / 33.363*	*40 / 98.988*
Subtotal: Procurement, All Modification Items	*- / 8.911*	*- / 8.285*	*- / 8.300*	*- / 8.466*	*- / -*	*- / 8.466*	*- / 8.468*	*- / 8.540*	*- / 8.589*	*- / 6.066*	*- / 33.363*	*- / 98.988*
Support *(All Modification Items)*												
2.1) Integrated Logistics Support	- / 0.816	- / 0.165	- / 0.165	- / 0.165	- / -	- / 0.165	- / 0.160	- / 0.150	- / 0.120	- / 0.110	Continuing	Continuing
2.2) Production Engineering	- / 3.412	- / 0.570	- / 0.570	- / 0.572	- / -	- / 0.572	- / 0.574	- / 0.574	- / 0.576	- / 0.580	Continuing	Continuing
2.3) Quality Assurance	- / 0.060	- / 0.044	- / 0.045	- / 0.045	- / -	- / 0.045	- / 0.045	- / 0.046	- / 0.047	- / 0.047	Continuing	Continuing
Subtotal: Support	*- / 4.288*	*- / 0.779*	*- / 0.780*	*- / 0.782*	*- / -*	*- / 0.782*	*- / 0.779*	*- / 0.770*	*- / 0.743*	*- / 0.737*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: X1036 AN/FPN-63 PAR TECH REFRESH	- / 7.064	- / 3.148	- / 3.210	- / 3.275	- / 0.000	- / 3.275	- / 3.421	- / 3.591	- / 3.717	- / 3.779	- / 33.330	- / 64.535
Subtotal: Installation	*- / 7.064*	*- / 3.148*	*- / 3.210*	*- / 3.275*	*- / -*	*- / 3.275*	*- / 3.421*	*- / 3.591*	*- / 3.717*	*- / 3.779*	*- / 33.330*	*- / 64.535*
Total												
Total Cost (Procurement + Support + Installation)	**20.263**	**12.212**	**12.290**	**12.523**	**0.000**	**12.523**	**12.668**	**12.901**	**13.049**	**10.582**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 12 / X1036 AN/FPN-63 PAR TECH REFRESH

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: X1036 AN/FPN-63 PAR TECH REFRESH

Manufacturer Information

Manufacturer Name: MOOG | Manufacturer Location: Salt Lake City, UT

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 13

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026

Installation Information

Method of Implementation: Alteration Installation Team:: Installation Name: X1036 - PAR Tech Refresh

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	7 / 7.064	2 / 3.148	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 10.212
FY 2019	- / -	- / -	3 / 3.210	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.210
FY 2020	- / -	- / -	- / -	3 / 3.275	0 / 0.000	3 / 3.275	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.275
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.421	- / -	- / -	- / -	0 / 0.000	3 / 3.421
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.591	- / -	- / -	0 / 0.000	3 / 3.591
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.717	- / -	0 / 0.000	3 / 3.717
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.779	0 / 0.000	3 / 3.779
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.885	2 / 3.885
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 29.445	11 / 29.445
Total	7 / 7.064	2 / 3.148	3 / 3.210	3 / 3.275	0 / 0.000	3 / 3.275	3 / 3.421	3 / 3.591	3 / 3.717	3 / 3.779	13 / 33.330	40 / 64.535

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	7	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	13	40
Out	7	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	13	40

Footnotes:

(21) Increase in installation costs across the FYDP due to site preps required for each install.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 13 / X1037 Instrument Landing System Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.053	4.156	4.163	5.309	0.000	5.309	5.574	5.503	5.710	6.265	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.053	4.156	4.163	5.309	0.000	5.309	5.574	5.503	5.710	6.265	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.053**	**4.156**	**4.163**	**5.309**	**0.000**	**5.309**	**5.574**	**5.503**	**5.710**	**6.265**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Instrument Landing System AN/GRN-33(V) is an automated self-contained system providing precision approach to the air station runways for ILS equipped aircraft reducing manpower required for ground personnel. The First Article unit will have a higher installation cost because of the additional infrastructure to maintain a test bed for NAWCAD Patuxent River. Site surveys are required to be conducted at least three years ahead of system installation to allow for infrastructure upgrades required to install the systems at the air stations.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 13 / X1037 Instrument Landing System Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: X1037 Instrument Landing System Upgrade												
B Kits												
Recurring												
1.1.1) Instrument Landing System Upgrades - NonOrganic (22)	3 / 1.129	2 / 0.727	2 / 0.729	3 / 1.122	- / -	3 / 1.122	3 / 1.143	3 / 1.165	3 / 1.255	3 / 1.660	9 / 4.979	31 / 13.909
Subtotal: Recurring	*- / 1.129*	*- / 0.727*	*- / 0.729*	*- / 1.122*	*- / -*	*- / 1.122*	*- / 1.143*	*- / 1.165*	*- / 1.255*	*- / 1.660*	*- / 4.979*	*- / 13.909*
Subtotal: X1037 Instrument Landing System Upgrade	*3 / 1.129*	*2 / 0.727*	*2 / 0.729*	*3 / 1.122*	*- / -*	*3 / 1.122*	*3 / 1.143*	*3 / 1.165*	*3 / 1.255*	*3 / 1.660*	*9 / 4.979*	*31 / 13.909*
Subtotal: Procurement, All Modification Items	*- / 1.129*	*- / 0.727*	*- / 0.729*	*- / 1.122*	*- / -*	*- / 1.122*	*- / 1.143*	*- / 1.165*	*- / 1.255*	*- / 1.660*	*- / 4.979*	*- / 13.909*
Support *(All Modification Items)*												
2.1) Logistics	- / 0.835	- / 0.390	- / 0.390	- / 0.617	- / -	- / 0.617	- / 0.480	- / 0.470	- / 0.465	- / 0.464	Continuing	Continuing
2.2) Production Engineering	- / 2.121	- / 0.825	- / 0.825	- / 1.300	- / -	- / 1.300	- / 1.086	- / 0.899	- / 0.899	- / 0.914	Continuing	Continuing
2.4) Quality Assurance	- / 0.073	- / 0.044	- / 0.044	- / 0.045	- / -	- / 0.045	- / 0.045	- / 0.046	- / 0.047	- / 0.047	Continuing	Continuing
Subtotal: Support	*- / 3.029*	*- / 1.259*	*- / 1.259*	*- / 1.962*	*- / -*	*- / 1.962*	*- / 1.611*	*- / 1.415*	*- / 1.411*	*- / 1.425*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: X1037 Instrument Landing System Upgrade	- / 4.895	- / 2.170	- / 2.175	- / 2.225	- / 0.000	- / 2.225	- / 2.820	- / 2.923	- / 3.044	- / 3.180	- / 12.320	- / 35.752
Subtotal: Installation	*- / 4.895*	*- / 2.170*	*- / 2.175*	*- / 2.225*	*- / -*	*- / 2.225*	*- / 2.820*	*- / 2.923*	*- / 3.044*	*- / 3.180*	*- / 12.320*	*- / 35.752*
Total												
Total Cost (Procurement + Support + Installation)	**9.053**	**4.156**	**4.163**	**5.309**	**0.000**	**5.309**	**5.574**	**5.503**	**5.710**	**6.265**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 13 / X1037 Instrument Landing System Upgrade

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: X1037 Instrument Landing System Upgrade

Manufacturer Information

Manufacturer Name: Selex ES | Manufacturer Location: Overland Park, KS

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 13

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Instrument Landing System Upgrades

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	1 / 4.895	2 / 2.170	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 7.065
FY 2019	- / -	- / -	2 / 2.175	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.175
FY 2020	- / -	- / -	- / -	2 / 2.225	0 / 0.000	2 / 2.225	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.225
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.820	- / -	- / -	- / -	0 / 0.000	3 / 2.820
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.923	- / -	- / -	0 / 0.000	3 / 2.923
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.044	- / -	0 / 0.000	3 / 3.044
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.180	0 / 0.000	3 / 3.180
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.230	3 / 3.230
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 9.090	9 / 9.090
Total	1 / 4.895	2 / 2.170	2 / 2.175	2 / 2.225	0 / 0.000	2 / 2.225	3 / 2.820	3 / 2.923	3 / 3.044	3 / 3.180	12 / 12.320	31 / 35.752

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	1	-	-	2	-	-	1	1	-	-	1	1	-	-	1	1	1	1	1	1	-	1	1	1	-	-	1	1	1	12	31
Out	1	-	-	2	-	-	1	1	-	-	1	1	-	-	1	1	1	1	1	1	-	1	1	1	-	-	1	1	1	12	31

Footnotes:

(22) Inventory objective is 31. Each site (airfield, air station, etc.) will have an independent installation cost base on existing site configurations.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 14 / X1043 TACAN Antenna Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	26.960	9.910	9.994	10.615	0.000	10.615	11.097	11.580	11.944	12.354	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	26.960	9.910	9.994	10.615	0.000	10.615	11.097	11.580	11.944	12.354	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**26.960**	**9.910**	**9.994**	**10.615**	**0.000**	**10.615**	**11.097**	**11.580**	**11.944**	**12.354**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The TACAN Antenna Upgrade program will provide ships and shore installations with a new antenna for TACAN systems. Justification: TACAN is a dated systems with multiple obsolete parts. Modernization of the TACAN antenna is required to reduce maintenance and improve life span in order to meet needs of the Fleet, and provide a stand-alone recovery system for small combatants of the JPALS program restructure.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 14 / X1043 TACAN Antenna Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore Sites	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: X1043 TACAN Antenna Upgrade												
B Kits												
Recurring												
1.1.1) TACAN Antenna Upgrade - NonOrganic (23)	35 / 8.222	24 / 6.075	24 / 6.120	24 / 6.448	- / -	24 / 6.448	24 / 6.642	24 / 6.843	24 / 7.049	24 / 7.362	62 / 21.998	265 / 76.759
Subtotal: Recurring	*- / 8.222*	*- / 6.075*	*- / 6.120*	*- / 6.448*	*- / -*	*- / 6.448*	*- / 6.642*	*- / 6.843*	*- / 7.049*	*- / 7.362*	*- / 21.998*	*- / 76.759*
Subtotal: X1043 TACAN Antenna Upgrade	*35 / 8.222*	*24 / 6.075*	*24 / 6.120*	*24 / 6.448*	*- / -*	*24 / 6.448*	*24 / 6.642*	*24 / 6.843*	*24 / 7.049*	*24 / 7.362*	*62 / 21.998*	*265 / 76.759*
Subtotal: Procurement, All Modification Items	*- / 8.222*	*- / 6.075*	*- / 6.120*	*- / 6.448*	*- / -*	*- / 6.448*	*- / 6.642*	*- / 6.843*	*- / 7.049*	*- / 7.362*	*- / 21.998*	*- / 76.759*
Support *(All Modification Items)*												
2.1) Logistics	- / 3.026	- / 0.231	- / 0.231	- / 0.233	- / -	- / 0.233	- / 0.238	- / 0.242	- / 0.248	- / 0.252	Continuing	Continuing
2.2) Production Engineering	- / 1.600	- / 0.801	- / 0.801	- / 0.803	- / -	- / 0.803	- / 0.819	- / 0.835	- / 0.852	- / 0.869	Continuing	Continuing
2.3) Quality Assurance	- / 0.137	- / 0.053	- / 0.042	- / 0.042	- / -	- / 0.042	- / 0.040	- / 0.040	- / 0.041	- / 0.042	Continuing	Continuing
Subtotal: Support	*- / 4.763*	*- / 1.085*	*- / 1.074*	*- / 1.078*	*- / -*	*- / 1.078*	*- / 1.097*	*- / 1.117*	*- / 1.141*	*- / 1.163*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: X1043 TACAN Antenna Upgrade	- / 13.975	- / 2.750	- / 2.800	- / 3.089	- / 0.000	- / 3.089	- / 3.358	- / 3.620	- / 3.754	- / 3.829	- / 25.903	- / 63.078
Subtotal: Installation	*- / 13.975*	*- / 2.750*	*- / 2.800*	*- / 3.089*	*- / -*	*- / 3.089*	*- / 3.358*	*- / 3.620*	*- / 3.754*	*- / 3.829*	*- / 25.903*	*- / 63.078*
Total												
Total Cost (Procurement + Support + Installation)	**26.960**	**9.910**	**9.994**	**10.615**	**0.000**	**10.615**	**11.097**	**11.580**	**11.944**	**12.354**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2820 / Ashore ATC Equipment	**Modification Number / Title:** 14 / X1043 TACAN Antenna Upgrade
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: X1043 TACAN Antenna Upgrade

Manufacturer Information

Manufacturer Name: MOOG	Manufacturer Location: Salt Lake City, UT
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 13

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026

Installation Information

Method of Implementation: AIT Installation:: Installation Name: TACAN Antenna Upgrade

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	11 / 13.975	24 / 2.750	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	35 / 16.725
FY 2019	- / -	- / -	24 / 2.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 2.800
FY 2020	- / -	- / -	- / -	24 / 3.089	0 / 0.000	24 / 3.089	- / -	- / -	- / -	- / -	0 / 0.000	24 / 3.089
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.358	- / -	- / -	- / -	0 / 0.000	24 / 3.358
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.620	- / -	- / -	0 / 0.000	24 / 3.620
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.754	- / -	0 / 0.000	24 / 3.754
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.829	0 / 0.000	24 / 3.829
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.905	24 / 3.905
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 21.998	62 / 21.998
Total	11 / 13.975	24 / 2.750	24 / 2.800	24 / 3.089	0 / 0.000	24 / 3.089	24 / 3.358	24 / 3.620	24 / 3.754	24 / 3.829	86 / 25.903	265 / 63.078

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	11	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	86	265
Out	11	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	86	265

Footnotes:

(23) X1043: Inventory objective is 265. Increase above inflation from FY20-FY21 is due to a higher percentage of new units instead of refurbished units.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	58.338	47.890	63.279	65.113	0.000	65.113	76.106	107.797	110.593	112.760	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	58.338	47.890	63.279	65.113	0.000	65.113	76.106	107.797	110.593	112.760	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**58.338**	**47.890**	**63.279**	**65.113**	**0.000**	**65.113**	**76.106**	**107.797**	**110.593**	**112.760**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	1.767	5.096	-	5.096	5.250	7.916	2.885	2.767	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In FY 2016 and prior years, efforts for Shipboard Air Traffic Control (SATC) and Automatic Carrier Landing System (ACLS) were previously funded under BLIs OPN 2831 and OPN 2832, respectively.

DESCRIPTION:
Shipboard Air Traffic Control (SATC):
SATC systems are responsible for safe and expeditious control of air traffic within 50 Nautical Miles of a ship. SATC systems include the air traffic surveillance radar (ASR), AN/SPN43 and the air traffic control processing and display system, AN/TPX-42A(V), which has three major configurations: AN/TPX-42A(V)14/15/16. v14 and v16 configurations comprise of Carrier Air Traffic Control Center - Direct Altitude and Identity Readout (CATCC-DAIR), Amphibious Air Traffic Control Center - Direct Altitude and Identity Readout (AATCC-DAIR); both (V)14 and (V)16 DAIR systems use AN/SPN-43 and Identification Friend or Foe (IFF) inputs to track and control aircraft. The third configuration, AN/TPX-42A(V)15 interfaces with next generation multipurpose radars and IFF to perform the same mission. Obsolescence problems are being addressed through various upgrades in a phased approach. The major upgrades include a series of AN/TPX-42A(V) modification kits requiring various combinations of OL-541processor re-host, track processor upgrade, OD-220 console, audio/video recorder, flat panel display, embedded trainer, and other components to bring the AN/TPX-42A(V)14 system to AN/TPX-42A(V)16 configuration and eventually, through execution of the Air Traffic Control Multifunction Console Engineering Change Proposal (ECP), to the AN/SYY-1 configuration. The nomenclature AN/SYY-1 more accurately reflects the system attributes as a (S) water (Surface Ship), (Y) data processing, (Y) surveillance and control system. The ASR capability provided by the AN/SPN-43 radar system is required for NIMITZ Class CVNs and LHA/LHD class ships until the capability is replaced by the AN/SPN-50 Shipboard Air Traffic Radar. Obsolescence problems are being addressed through various upgrades in a phased approach until replaced.

Shipboard Air Traffic Radar (SATR) (SPN-50)
The "National Defense Strategy of the United States of America" calls for military forces to assure allies and friends, dissuade potential adversaries, deter aggression and counter coercion, and defeat adversaries in order to accomplish our national objectives. The Shipboard Air Traffic Radar (SATR) AN/SPN-50(V)1 (hereinafter referred to as AN/SPN-50(V)1) supports these objectives and will be the primary Air Traffic Control (ATC) surveillance radar onboard Nimitz Class Aircraft Carrier (CVN) and Amphibious (LHA and LHD (LH)) type ships. The launch and recovery of aircraft, to include, ATC is a primary function of aircraft carriers and amphibious landing platforms. The surveillance function provides weather and radar data to air traffic controllers supporting aviation operations of all Navy, Marine Corps, joint and allied aviation assets within the assigned airspace. This data is utilized by air traffic controllers to provide a variety of ATC services such as ATC radar approach and departure services, which includes aircraft separation, airspace monitoring, navigational assistance, emergency vectoring, traffic calls, and vectoring and sequencing to the final approach point. Reliable and accurate ATC surveillance radar enhances overall mission and training effectiveness, and safety for aircrews and aircraft alike. The SPN-50 CDD was signed March 2015 and Milestone B was held September 2015 where the Milestone Decision Authority (MDA) designated the SPN-50 Program as an ACAT 4(T). The SPN-50 CPD was signed November 2018. Milestone C is planned for 3rd Quarter 2020 and IOC is planned for 4thQuarter 2022. The AN/SPN-50(V) inventory objective is 25 systems (5 LRIPs, and 20 FRP).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Automatic Carrier Landing System (ACLS):
ACLS program comprises three legacy systems (AN/SPN-46, AN/SPN-41, and AN/SPN-35C) that provide the primary and secondary precision electronic guidance for landing suitably equipped aircraft under all weather conditions on CVNs, LHA/LHD class ships, and selected Naval Air Stations. Many of the components in the system have been in service for more than twenty years. This program funds maintainability, reliability, modernization and supportability improvements to existing equipment components that can no longer be maintained, procured or supported, as well as items providing upgraded operational capability. Life Cycle Extension (LCE) sustainment efforts for ACLS systems will be completed to address obsolescence and supportability issues, leverage Commercial Off-The-Shelf (COTS) technology, address cyber-security updates and requirements, and support external system interface requirements. The LCE efforts by system are planned to be conducted in blocks, to address the most critical obsolescence, supportability, and emergent requirements first and to group remaining improvements into logical block upgrade packages that minimize multiple, duplicative repair efforts and reduce costs while delivering hardware in a time phased approach to meet ship maintenance availability schedules. This program includes a shore-based variant, installed at key airfields, that provides identical control signal indications (for pilot familiarization) as those provided by the afloat based systems on board CVN and L-Class vessels.

AN/SPN-46 Automatic Carrier Landing System (ACLS) is a Precision Approach Landing System (PALS) on board CVN class ships that provides aircraft position information to the Final Control Workstation in Carrier Air Traffic Control Center (CATCC), and provides the pilot with the capability of selecting a fully automatic, instrument landing, or talk down approach. This system is certified to provide the carrier with an all-weather flight operational capability. Initial Operational Capability (IOC) of the AN/SPN-46 was in 1985, and the system has exceeded its design life. There are significant obsolescence issues. AN/SPN-46 Block IV upgrade is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card Assemblies (CCAs). If this effort is not accomplished, replacement parts will not be available to support the system, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft
carrier.

AN/SPN-41 Transmitting set provides all weather instrument approach guidance from the ship to the aircraft equipped with AN/ARA-63 Receiver Group. It is a secondary precision electronic landing system and safety of flight back
up to provide azimuth and elevation alignment information to suitably equipped aircraft aboard CVN and LHA/LHD class ships. Initial Operational Capability (IOC) of the AN/SPN-41 was in 1970 and the system has exceeded its design life. AN/SPN-41 LCE upgrades include the Transmitter, Coder, Electronics Drawer, and Radome hardware to ensure continued operational availability of and extended the service life of the AN/SPN-41, and is the Joint Precision Approach and Landing System (JPALS) back-up system.

AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is used for Mode III aircraft recovery which ensures the safe approach and landing of AV-8B and various helicopters during adverse weather and night
conditions. Initial Operational Capability (IOC) of the AN/SPN-35C was in 2004. The AN/SPN-35C Block I upgrade includes replacement of common failure items, obsolete components, and analog system components, including
the Radar Processor Controller (RPC), the Main Input/Output Processor (MIOP), and replace obsolete Control-Indicator Displays to ensure continued operational availability of and extended the service life of the AN/SPN-35C.

Procurement, installations and associated support costs with these efforts prior to FY2017 were funded under BLI 2832.

Installing Agent: Shipyards and Alteration Installation Teams.
When installation to be made: Selected Restricted Availability (SRA) / Restricted Availability (RAV).
Ships or facilities to receive the equipment: CVNs, LHA/LHD class ships, Software Support Activity (NAWCAD, St Inigoes, MD) and various selected shore and training sites.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment

P-1 Line Item Number / Title:
2830 / Afloat ATC Equipment

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059) (Modernization)				- / 15.621	- / 8.593	- / 8.509	- / 8.528	- / 0.000	- / 8.528
P-3a	2 / ACLS MOD KITS SUMMARY PN408 (Modernization)				- / 20.544	- / 19.512	- / 14.675	- / 13.112	- / 0.000	- / 13.112
P-3a	3 / AN/SPN-46 (V)3 Radar Set Group PN413 (Reliability)				- / 11.511	- / 3.384	- / 2.632	- / 0.807	- / 0.000	- / 0.807
P-3a	4 / AN/SPN-41 Transmitter MOD (LCE) PN416 (Modernization)				- / 1.600	- / 0.019	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	5 / AN/SPN-41 Coder Monitor (LCE) PN417 (Modernization)				- / 2.004	- / 0.614	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418 (Modernization)				- / 3.926	- / 1.581	- / 0.800	- / 0.000	- / 0.000	- / 0.000
P-3a	7 / AN/SPN-46 Block IV (PN420) (TBD)				- / 3.132	- / 14.187	- / 16.195	- / 6.471	- / 0.000	- / 6.471
P-3a	8 / AN/SPN-35 Block I (PN421) (TBD)				- / 0.000	- / 0.000	- / 4.628	- / 4.623	- / 0.000	- / 4.623
P-3a	9 / AN/SPN-50(V)1 (TBD)				- / 0.000	- / 0.000	- / 15.840	- / 31.572	- / 0.000	- / 31.572
P-3a	10 / AN/SPN-35 Block II (PN422) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	11 / AN/SPN-46 Block V (PN423) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 58.338**	**- / 47.890**	**- / 63.279**	**- / 65.113**	**- / 0.000**	**- / 65.113**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059) (Modernization)				- / 8.685	- / 8.876	- / 8.053	- / 7.488	Continuing	Continuing
P-3a	2 / ACLS MOD KITS SUMMARY PN408 (Modernization)				- / 9.902	- / 6.189	- / 3.833	- / 3.859	Continuing	Continuing
P-3a	3 / AN/SPN-46 (V)3 Radar Set Group PN413 (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 18.334
P-3a	4 / AN/SPN-41 Transmitter MOD (LCE) PN416 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.619
P-3a	5 / AN/SPN-41 Coder Monitor (LCE) PN417 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.618
P-3a	6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.307
P-3a	7 / AN/SPN-46 Block IV (PN420) (TBD)				- / 12.399	- / 20.849	- / 15.681	- / 9.714	- / 16.278	- / 114.906
P-3a	8 / AN/SPN-35 Block I (PN421) (TBD)				- / 9.748	- / 11.280	- / 5.983	- / 3.509	- / 0.000	- / 39.771
P-3a	9 / AN/SPN-50(V)1 (TBD)				- / 35.372	- / 54.093	- / 56.173	- / 56.697	- / 68.972	- / 318.719
P-3a	10 / AN/SPN-35 Block II (PN422) (TBD)				- / 0.000	- / 0.000	- / 13.257	- / 22.977	- / 45.988	- / 82.222
P-3a	11 / AN/SPN-46 Block V (PN423) (TBD)				- / 0.000	- / 6.510	- / 7.613	- / 8.516	- / 12.722	- / 35.361
P-40	**Total Gross/Weapon System Cost**				**- / 76.106**	**- / 107.797**	**- / 110.593**	**- / 112.760**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Justification:
FY 2021 funds baseline programs to provide Automatic Carrier Landing System (ACLS) and Shipboard Air Traffic Control (SATC) systems.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	15.621	8.593	8.509	8.528	0.000	8.528	8.685	8.876	8.053	7.488	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	15.621	8.593	8.509	8.528	0.000	8.528	8.685	8.876	8.053	7.488	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**15.621**	**8.593**	**8.509**	**8.528**	**0.000**	**8.528**	**8.685**	**8.876**	**8.053**	**7.488**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This equipment and installation costs on this P-3a are for individual modification programs. This exhibit summarizes procurement and installation for Cost Codes MP054, MP055, MP056, MP057, MP058, and MP059. Line item Engineering Changes to Correct Deficiencies captures unanticipated emergent engineering changes.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ships	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)												
B Kits												
Recurring												
1.1.4) (MP054)TPX-42 UPG, FC4 (Recorders) - NonOrganic (1)	14 / 0.410	6 / 0.318	5 / 0.117	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 0.845
1.1.5) (MP055) TPX-42 UPG, FC5 - NonOrganic (2)	8 / 2.548	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 2.548
1.1.6) (MP056) TPX-42 Embedded Trainer - NonOrganic (3)	14 / 2.093	1 / 0.527	2 / 1.069	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 3.689
1.1.7) (MP057) TPX-42 Embedded Trainer Final Control - NonOrganic (4)	- / -	7 / 0.310	6 / 0.268	5 / 0.278	- / -	5 / 0.278	7 / 0.398	- / -	- / -	- / -	- / -	25 / 1.254
1.1.8) (MP058) TPX-42 Multi-Function Console - NonOrganic (5)	1 / 1.555	3 / 3.783	3 / 3.840	2 / 2.598	- / -	2 / 2.598	4 / 5.274	3 / 4.015	2 / 2.717	2 / 2.900	5 / 6.512	25 / 33.194
1.1.9) (MP059) TPX-42 ECP Upgrades - NonOrganic (6)	7 / 2.665	- / -	1 / 0.042	1 / 0.060	- / -	1 / 0.060	- / -	- / -	6 / 1.431	6 / 1.748	Continuing	Continuing
Subtotal: Recurring	*- / 9.271*	*- / 4.938*	*- / 5.336*	*- / 2.936*	*- / -*	*- / 2.936*	*- / 5.672*	*- / 4.015*	*- / 4.148*	*- / 4.648*	*Continuing*	*Continuing*
Subtotal: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)	*44 / 9.271*	*17 / 4.938*	*17 / 5.336*	*8 / 2.936*	*- / -*	*8 / 2.936*	*11 / 5.672*	*3 / 4.015*	*8 / 4.148*	*8 / 4.648*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 9.271*	*- / 4.938*	*- / 5.336*	*- / 2.936*	*- / -*	*- / 2.936*	*- / 5.672*	*- / 4.015*	*- / 4.148*	*- / 4.648*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Engineering Changes to Correct Deficiencies	- / 1.009	- / 0.625	- / 0.417	- / 0.609	- / -	- / 0.609	- / 0.398	- / 0.521	- / 0.530	- / 0.550	Continuing	Continuing
2.2) Integrated Logistics Support	- / 0.566	- / 0.289	- / 0.294	- / 0.298	- / -	- / 0.298	- / 0.303	- / 0.307	- / 0.312	- / 0.320	Continuing	Continuing
2.3) Production Engineering	- / 0.544	- / 0.278	- / 0.282	- / 0.287	- / -	- / 0.287	- / 0.291	- / 0.295	- / 0.300	- / 0.310	Continuing	Continuing
2.4) Quality Assurance	- / 0.101	- / 0.052	- / 0.052	- / 0.053	- / -	- / 0.053	- / 0.054	- / 0.055	- / 0.055	- / 0.056	Continuing	Continuing
Subtotal: Support	*- / 2.220*	*- / 1.244*	*- / 1.045*	*- / 1.247*	*- / -*	*- / 1.247*	*- / 1.046*	*- / 1.178*	*- / 1.197*	*- / 1.236*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)	- / 4.130	- / 2.411	- / 2.128	- / 4.345	- / 0.000	- / 4.345	- / 1.967	- / 3.683	- / 2.708	- / 1.604	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ships	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Subtotal: Installation	- / 4.130	- / 2.411	- / 2.128	- / 4.345	- / -	- / 4.345	- / 1.967	- / 3.683	- / 2.708	- / 1.604	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**15.621**	**8.593**	**8.509**	**8.528**	**0.000**	**8.528**	**8.685**	**8.876**	**8.053**	**7.488**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Manufacturer Information

Manufacturer Name: NAWCAD	Manufacturer Location: Patuxent River, MD
Administrative Leadtime *(in Months)*: 7	Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Apr 2019	Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025
Delivery Dates	Oct 2019	Oct 2020	Oct 2021	Oct 2022	Oct 2023	Oct 2024	Oct 2025

Installation Information

Method of Implementation: [none specified]:: Installation Name: (MP054)TPX-42 UPG, FC4 (Recorders)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	12 / 0.617	2 / 0.115	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 0.732
FY 2019	- / -	- / -	6 / 0.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.675
FY 2020	- / -	- / -	- / -	5 / 0.574	0 / 0.000	5 / 0.574	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.574
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	12 / 0.617	2 / 0.115	6 / 0.675	5 / 0.574	0 / 0.000	5 / 0.574	- / -	- / -	- / -	- / -	0 / 0.000	25 / 1.981

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	12	-	1	1	-	2	2	2	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Out	12	-	1	1	-	2	2	2	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: AIT:: Installation Name: (MP055) TPX-42 UPG, FC5

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 0.563	2 / 0.196	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.759
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	6 / 0.563	2 / 0.196	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.759

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	6	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Method of Implementation: [none specified]:: Installation Name: (MP056) TPX-42 Embedded Trainer

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	11 / 1.810	3 / 1.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 3.110
FY 2019	- / -	- / -	1 / 0.442	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.442
FY 2020	- / -	- / -	- / -	2 / 0.897	0 / 0.000	2 / 0.897	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.897
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: [none specified]:: Installation Name: (MP056) TPX-42 Embedded Trainer

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	11 / 1.810	3 / 1.300	1 / 0.442	2 / 0.897	0 / 0.000	2 / 0.897	- / -	- / -	- / -	- / -	0 / 0.000	17 / 4.449

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	11	-	1	1	1	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Out	11	-	1	1	1	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17

Method of Implementation: [none specified]:: Installation Name: (MP057) TPX-42 Embedded Trainer Final Control

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	7 / 0.378	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 0.378
FY 2020	- / -	- / -	- / -	6 / 0.329	0 / 0.000	6 / 0.329	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.329
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.712	- / -	- / -	- / -	0 / 0.000	5 / 0.712
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.135	- / -	- / -	0 / 0.000	7 / 1.135
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	7 / 0.378	6 / 0.329	0 / 0.000	6 / 0.329	5 / 0.712	7 / 1.135	- / -	- / -	0 / 0.000	25 / 2.554

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: [none specified]:: Installation Name: (MP057) TPX-42 Embedded Trainer Final Control

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	2	3	2	-	2	2	2	-	-	1	2	2	-	2	2	3	-	-	-	-	-	-	-	-	-	25
Out	-	-	-	-	-	2	3	2	-	2	2	2	-	-	1	2	2	-	2	2	3	-	-	-	-	-	-	-	-	-	25

Method of Implementation: AIT:: Installation Name: (MP058) TPX-42 Multi-Function Console

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	1 / 0.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.500
FY 2019	- / -	- / -	1 / 0.609	2 / 1.236	0 / 0.000	2 / 1.236	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.845
FY 2020	- / -	- / -	- / -	2 / 1.236	0 / 0.000	2 / 1.236	1 / 0.627	- / -	- / -	- / -	0 / 0.000	3 / 1.863
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.628	1 / 0.637	- / -	- / -	0 / 0.000	2 / 1.265
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.911	1 / 0.646	- / -	0 / 0.000	4 / 2.557
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.939	- / -	0 / 0.000	3 / 1.939
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.604	0 / 0.000	2 / 1.604
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.608	2 / 1.608
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 5.075	5 / 5.075
Total	- / -	1 / 0.500	1 / 0.609	4 / 2.472	0 / 0.000	4 / 2.472	2 / 1.255	4 / 2.548	4 / 2.585	2 / 1.604	7 / 6.683	25 / 18.256

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	1	-	-	1	-	-	2	2	-	-	1	1	-	-	1	1	1	1	1	1	1	1	-	-	1	1	7	25
Out	-	-	-	1	-	-	1	-	-	2	2	-	-	1	1	-	-	1	1	1	1	1	1	1	1	-	-	1	1	7	25

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: AIT:: Installation Name: (MP059) TPX-42 ECP Upgrades

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 1.140	1 / 0.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 1.440
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	1 / 0.024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.024
FY 2021	- / -	- / -	- / -	1 / 0.073	0 / 0.000	1 / 0.073	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.073
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.123	- / -	Continuing	Continuing
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
Total	6 / 1.140	1 / 0.300	1 / 0.024	1 / 0.073	0 / 0.000	1 / 0.073	- / -	- / -	1 / 0.123	- / -	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	5	15
Out	6	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	5	15

Footnotes:

(1) MP054 TPX-42 UPG, FC4: Inventory Objective is 25. 4 procurements and 4 installations were funded prior to FY17 and are reflected in BLI 2831.

(2) MP055 TPX-42 UPG, FC5 Inventory objective is 8. 14 procurements and 14 installations were funded prior to FY17 and are reflected in BLI 2831.

(3) MP056 TPX-42 Embedded Trainer: Inventory Objective is 17. 8 procurements and 8 installations were funded prior to FY17 and are reflected in BLI 2831.

(4) MP057 TPX-42 Embedded Trainer Final Control: Inventory Objective is 25.

(5) MP058 TPX-42 Multi-Function Console: Inventory Objective is 25. The Multi-Function Console (MFC) provides a common human interface for all ATC workstations that includes complete upgrades of software and hardware to support new radar sensors that will reduce operational costs and improve reliability. This item is currently in development and is reflected in the RDT&E Budget (PE 0604504N Air Control/Project Unit 0993). Many of the other items in this P-3a are Engineering Change Proposals to resolve obsolescence issues. One system consists of OD/220 controller consoles, OL/541 racks and MT7326 power distribution racks. The OL/541 and MT7326 are common between CVNs and LHD/LHAs, OD/220s however vary between the type of ship, there are 5 OD/220s on CVNs and 8 OD/220s on LHA/Ds.

(6) MP059 TPX-42 ECP Upgrades: 4 procurements and 4 installations were funded prior to FY17 and are reflected in BLI 2831. Each ECP will have unique unit cost and install cost associated with it.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 2 / ACLS MOD KITS SUMMARY PN408
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	20.544	19.512	14.675	13.112	0.000	13.112	9.902	6.189	3.833	3.859	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	20.544	19.512	14.675	13.112	0.000	13.112	9.902	6.189	3.833	3.859	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**20.544**	**19.512**	**14.675**	**13.112**	**0.000**	**13.112**	**9.902**	**6.189**	**3.833**	**3.859**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The equipment and installation costs on this P-3a are for individual modification programs for AN/SPN-35/41/46 and FRN-49 systems. Funding has also been provided for upgrades addressing broadened cyber-security requirements to remain compliant with software cyber-security directives and Information Assurance mandates. Line item "Engineering Changes to Correct Deficiencies" captures anticipated emergent engineering changes. PMA213 configuration control board approves inventory objectives. Contract and Delivery dates are various.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 2 / ACLS MOD KITS SUMMARY PN408
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ship, and selected shore sites	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408												
B Kits												
Non-Recurring												
1.1.1) AN/SPN-46 TS-4176 - NonOrganic (7)	9 / 1.000	1 / 0.217	1 / 0.217	1 / 0.217	- / -	1 / 0.217	- / -	- / -	- / -	- / -	- / -	12 / 1.651
1.1.3) AN/SPN-46 COTS Refresh - NonOrganic (8)	20 / 4.618	10 / 2.370	10 / 2.417	6 / 1.470	- / -	6 / 1.470	6 / 1.500	6 / 1.530	7 / 1.555	7 / 1.586	Continuing	Continuing
1.1.4) AN/SPN-46 Obsolescence - NonOrganic	14 / 3.619	10 / 2.964	5 / 1.543	11 / 3.509	- / -	11 / 3.509	6 / 1.985	- / -	- / -	- / -	- / -	46 / 13.620
1.1.14) AN/SPN-35 Receiver Transmitter Mod - NonOrganic	5 / 0.084	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.084
1.1.15) AN/SPN-35/41 COTS Refresh - NonOrganic	- / -	1 / 3.526	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.526
1.1.17) AN/SPN-46 Unit 16 Power Supply - NonOrganic	- / -	3 / 0.552	3 / 0.561	4 / 0.764	- / -	4 / 0.764	3 / 0.582	3 / 0.585	- / -	- / -	- / -	16 / 3.044
1.1.18) AN/FRN-49 Instrument Carrier Landing Systems (ICLS) - NonOrganic	2 / 3.310	2 / 3.368	2 / 3.469	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 10.147
Subtotal: Non-Recurring	*- / 12.631*	*- / 12.997*	*- / 8.207*	*- / 5.960*	*- / -*	*- / 5.960*	*- / 4.067*	*- / 2.115*	*- / 1.555*	*- / 1.586*	*Continuing*	*Continuing*
Subtotal: ACLS MOD KITS SUMMARY PN408	*50 / 12.631*	*27 / 12.997*	*21 / 8.207*	*22 / 5.960*	*- / -*	*22 / 5.960*	*15 / 4.067*	*9 / 2.115*	*7 / 1.555*	*7 / 1.586*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 12.631*	*- / 12.997*	*- / 8.207*	*- / 5.960*	*- / -*	*- / 5.960*	*- / 4.067*	*- / 2.115*	*- / 1.555*	*- / 1.586*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Engineering Changes to Correct Deficiencies ECO SPN-46	- / 0.869	- / 0.843	- / 0.860	- / 0.432	- / -	- / 0.432	- / 0.430	- / 0.430	- / 0.264	- / 0.224	Continuing	Continuing
2.2) Engineering Changes to Correct Deficiencies ECO SPN-35/41	- / 1.325	- / 0.750	- / 0.766	- / 0.881	- / -	- / 0.881	- / 0.578	- / 0.640	- / 0.438	- / -	Continuing	Continuing
2.3) Integrated Logistics Support	- / 1.237	- / 0.568	- / 0.453	- / 0.473	- / -	- / 0.473	- / 0.482	- / 0.496	- / 0.438	- / 0.327	Continuing	Continuing
2.4) Production Engineering	- / 2.447	- / 1.978	- / 2.019	- / 1.923	- / -	- / 1.923	- / 0.946	- / 0.950	- / 0.410	- / 0.349	Continuing	Continuing
2.5) Quality Assurance	- / 0.102	- / 0.106	- / 0.178	- / 0.182	- / -	- / 0.182	- / 0.111	- / 0.111	- / 0.113	- / 0.115	Continuing	Continuing
2.6) Acceptance, Test and Evaluation	- / 0.030	- / -	- / 0.030	- / 0.029	- / -	- / 0.029	- / -	- / -	- / -	- / -	- / -	- / 0.089
Subtotal: Support	*- / 6.010*	*- / 4.245*	*- / 4.306*	*- / 3.920*	*- / -*	*- / 3.920*	*- / 2.547*	*- / 2.627*	*- / 1.663*	*- / 1.015*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408	- / 1.903	- / 2.270	- / 2.162	- / 3.232	- / 0.000	- / 3.232	- / 3.288	- / 1.447	- / 0.615	- / 1.258	- / 1.659	- / 17.834
Subtotal: Installation	*- / 1.903*	*- / 2.270*	*- / 2.162*	*- / 3.232*	*- / -*	*- / 3.232*	*- / 3.288*	*- / 1.447*	*- / 0.615*	*- / 1.258*	*- / 1.659*	*- / 17.834*
Total												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 2 / ACLS MOD KITS SUMMARY PN408
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ship, and selected shore sites	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total Cost (Procurement + Support + Installation)	**20.544**	**19.512**	**14.675**	**13.112**	**0.000**	**13.112**	**9.902**	**6.189**	**3.833**	**3.859**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 2 / ACLS MOD KITS SUMMARY PN408
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408

Manufacturer Information

Manufacturer Name: NAWCAD	Manufacturer Location: Patuxent River, MD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024	Dec 2025

Installation Information

Method of Implementation: AIT (Alteration Installation Team):: Installation Name: ACLS Mod Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	18 / 1.903	30 / 2.270	2 / 0.441	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	50 / 4.614
FY 2019	- / -	- / -	25 / 1.721	2 / 1.708	0 / 0.000	2 / 1.708	- / -	- / -	- / -	- / -	0 / 0.000	27 / 3.429
FY 2020	- / -	- / -	- / -	19 / 1.524	0 / 0.000	19 / 1.524	2 / 1.210	- / -	- / -	- / -	0 / 0.000	21 / 2.734
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	22 / 2.078	- / -	- / -	- / -	0 / 0.000	22 / 2.078
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 1.447	- / -	- / -	0 / 0.000	15 / 1.447
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.615	- / -	3 / 0.376	9 / 0.991
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.258	0 / 0.000	7 / 1.258
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.283	7 / 1.283
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	18 / 1.903	30 / 2.270	27 / 2.162	21 / 3.232	0 / 0.000	21 / 3.232	24 / 3.288	15 / 1.447	6 / 0.615	7 / 1.258	10 / 1.659	158 / 17.834

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	18	-	13	14	3	1	16	10	-	1	8	8	4	1	12	11	-	1	10	4	-	-	-	3	3	-	-	3	4	10	158
Out	18	-	13	14	3	1	16	10	-	1	8	8	4	1	12	11	-	1	10	4	-	-	-	3	3	-	-	3	4	10	158

Footnotes:

(7) Procurements have extended to FY-21 due to ship install availability.

(8) The variance in kit costs from year to year is due to the makeup of the different equipment being installed each year, the different hull types receiving modifications, and the different Design Services Allocation (DSA) and install costs from different locations depending on where modifications are performed.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 3 / AN/SPN-46 (V)3 Radar Set Group PN413
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	11.511	3.384	2.632	0.807	0.000	0.807	0.000	0.000	0.000	0.000	0.000	18.334
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	11.511	3.384	2.632	0.807	0.000	0.807	0.000	0.000	0.000	0.000	0.000	18.334
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**11.511**	**3.384**	**2.632**	**0.807**	**0.000**	**0.807**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**18.334**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The equipment and installation costs are for individual modifications as part of the AN/SPN-46 Life Cycle Extension program. The current AN/SPN-46 receiver houses both Ka and X-band components that are densely packaged and RF components that are obsolete technology and are no longer manufactured. The Radar Set Group re-packages the RF components using more modern and smaller components making the unit able to be supported and maintained. The inventory objective for this item has increased from 13 to 14, of which 12 are OPN-funded and 2 SCN-funded. 6 of the 12 OPN funded were procured prior to FY2017 under BLI 2832 and 3 of those 6 were installed prior to FY2017 under BLI 2832. This inventory objective increase is required to add an additional OPN asset to the Landing Systems Test Facility to support the upcoming AN/SPN-46 Block upgrades.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 3 / AN/SPN-46 (V)3 Radar Set Group PN413
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs and selected shore sites	**Modification Type:** Reliability	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-46 (V)3 Radar Set Group PN413												
B Kits												
Recurring												
2.1.1) AN/SPN-46 (V)3 Radar Set Group PN413 - NonOrganic [9]	7 / 5.336	1 / 1.372	1 / 1.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 8.108
Subtotal: Recurring	*- / 5.336*	*- / 1.372*	*- / 1.400*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.108*
Subtotal: AN/SPN-46 (V)3 Radar Set Group PN413	*7 / 5.336*	*1 / 1.372*	*1 / 1.400*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*9 / 8.108*
Subtotal: Procurement, All Modification Items	*- / 5.336*	*- / 1.372*	*- / 1.400*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.108*
Support *(All Modification Items)*												
3.1) Integrated Logistic Support	- / 0.068	- / 0.048	- / 0.049	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.165
3.2) Production Engineering	- / 1.529	- / 0.385	- / 0.392	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.306
3.3) Acceptance Test & Evaluation	- / 0.514	- / 0.025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.539
Subtotal: Support	*- / 2.111*	*- / 0.458*	*- / 0.441*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 3.010*
Installation												
Modification Item 1 of 1: AN/SPN-46 (V)3 Radar Set Group PN413	- / 4.064	- / 1.554	- / 0.791	- / 0.807	- / 0.000	- / 0.807	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.216
Subtotal: Installation	*- / 4.064*	*- / 1.554*	*- / 0.791*	*- / 0.807*	*- / -*	*- / 0.807*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 7.216*
Total												
Total Cost (Procurement + Support + Installation)	**11.511**	**3.384**	**2.632**	**0.807**	**0.000**	**0.807**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**18.334**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 3 / AN/SPN-46 (V)3 Radar Set Group PN413

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SPN-46 (V)3 Radar Set Group PN413

Manufacturer Information

Manufacturer Name: NAWCAD | Manufacturer Location: Patuxent River, MD

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019					
Delivery Dates	Dec 2019	Dec 2020					

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: AN/SPN-46 (V)3 Radar Set Group PN413

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	5 / 4.064	2 / 1.554	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 5.618
FY 2019	- / -	- / -	1 / 0.791	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.791
FY 2020	- / -	- / -	- / -	1 / 0.807	0 / 0.000	1 / 0.807	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.807
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 4.064	2 / 1.554	1 / 0.791	1 / 0.807	0 / 0.000	1 / 0.807	- / -	- / -	- / -	- / -	0 / 0.000	9 / 7.216

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	1	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Out	5	-	1	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9

Footnotes:

(9) Inventory objective is 14, of which 12 are OPN-funded and 2 SCN-funded. Note - The auxiliary hardware required varies slightly depending on what past modifications have already been incorporated into the old chassis being upgraded to the new RSG. 6 of the 12 OPN funded were procured prior to FY2017 under BLI 2832 and 3 of those 6 were installed prior to FY2017 under BLI 2832.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 4 / AN/SPN-41 Transmitter MOD (LCE) PN416
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1.600	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.619
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1.600	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.619
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1.600**	**0.019**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.619**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

AN/SPN-41 Transmitter MOD (LCE) PN416. The equipment and installation costs are for individual modification programs though it must be installed in conjunction with ECP SPN41-030 and SPN41-034 in order to be fully functional as part of the AN/SPN-41 Life Cycle Extension (LCE) program. The existing transmitter is an older technology two-channel Silicon Controlled Rectifier (SCR) line type modulator that is experiencing maintainability and obsolescence issues. The transmitter is the number one maintenance cost driver and system performance degrader. This change will improve logistic supportability and system maintainability. Line Repairable Units (LRUs) Circuit Card Assemblies (CCAs) and Built-In Test (BIT) capabilities will be incorporated in the transmitter thus reducing cost for shipboard repairs and maintenance.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 4 / AN/SPN-41 Transmitter MOD (LCE) PN416
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-41 Transmitter MOD (LCE) PN416												
B Kits												
Recurring												
2.1.1) AN/SPN-41 Transmitter Replacement (LCE) - NonOrganic (10)	6 / 1.158	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.158
Subtotal: Recurring	*- / 1.158*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.158*
Subtotal: AN/SPN-41 Transmitter MOD (LCE) PN416	*6 / 1.158*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*6 / 1.158*
Subtotal: Procurement, All Modification Items	*- / 1.158*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.158*
Support *(All Modification Items)*												
3.1) Integrated Logistics	- / 0.061	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.061
3.2) Production Engineering	- / 0.280	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.280
Subtotal: Support	*- / 0.341*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.341*
Installation												
Modification Item 1 of 1: AN/SPN-41 Transmitter MOD (LCE) PN416	- / 0.101	- / 0.019	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.120
Subtotal: Installation	*- / 0.101*	*- / 0.019*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.120*
Total												
Total Cost (Procurement + Support + Installation)	**1.600**	**0.019**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.619**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 4 / AN/SPN-41 Transmitter MOD (LCE) PN416

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SPN-41 Transmitter MOD (LCE) PN416

Manufacturer Information

Manufacturer Name: NAWCAD | Manufacturer Location: Webster Field, St. Inigoes, MD

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Alteration Installation Team:: Installation Name: AN/SPN-41 Transmitter Replacement (LCE)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	5 / 0.101	1 / 0.019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.120
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 0.101	1 / 0.019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.120

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	5	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

Footnotes:

(10) AN/SPN-41 Transmitter MOD (LCE) inventory objective is 19. 14 procurements and 13 installations were funded through FY2016 on BLI 2832.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 5 / AN/SPN-41 Coder Monitor (LCE) PN417
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	2.004	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.618
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	2.004	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.618
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**2.004**	**0.614**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.618**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

AN/SPN-41 Coder Monitor (LCE) PN417. The equipment and installation costs are for individual modification programs though it must be installed in conjunction with ECP SPN41-030 and SPN41-031 in order to be fully functional as part of the AN/SPN-41/41A Life Cycle Extension program. This change will provide upgrades to AN/SPN-41/41A to improve Operational Availability (Ao) by addressing numerous part obsolescence issues germane to the current aging system. The change will also provide digital interfaces with other shipboard systems including the Joint Precision Approach Landing System (JPALS), and extend the service life of the AN/SPN-41/41A.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 5 / AN/SPN-41 Coder Monitor (LCE) PN417
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-41 Coder Monitor (LCE) PN417												
B Kits												
Recurring												
2.1.1) AN/SPN-41 Coder Monitor (LCE) - NonOrganic	3 / 0.414	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.414
Subtotal: Recurring	*- / 0.414*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.414*
Subtotal: AN/SPN-41 Coder Monitor (LCE) PN417	*3 / 0.414*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*3 / 0.414*
Subtotal: Procurement, All Modification Items	*- / 0.414*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.414*
Support *(All Modification Items)*												
3.1) Integrated Logistic Support	- / 0.079	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.079
3.2) Production Engineering	- / 0.317	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.317
Subtotal: Support	*- / 0.396*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.396*
Installation												
Modification Item 1 of 1: AN/SPN-41 Coder Monitor (LCE) PN417	- / 1.194	- / 0.614	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.808
Subtotal: Installation	*- / 1.194*	*- / 0.614*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.808*
Total												
Total Cost (Procurement + Support + Installation)	**2.004**	**0.614**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.618**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 5 / AN/SPN-41 Coder Monitor (LCE) PN417

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SPN-41 Coder Monitor (LCE) PN417

Manufacturer Information

Manufacturer Name: NAWCAD | Manufacturer Location: St. Inigoes, MD

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-41 Coder Monitor (LCE)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 1.194	1 / 0.614	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.808
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 1.194	1 / 0.614	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.808

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3.926	1.581	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.307
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3.926	1.581	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.307
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3.926**	**1.581**	**0.800**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**6.307**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

AN/SPN-41 Electronic Drawer Assembly (LCE) PN418. The equipment and installation costs are for individual modification programs though it must be installed in conjunction with ECP SPN41-031 and SPN41-034 in
order to be fully functional as part of the AN/SPN-41 Life Cycle Extension program. This change replaces obsolete analog interfaces with required digital interfaces to connect with other shipboard systems including the Joint
Precision Approach Landing System (JPALS).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418												
B Kits												
Recurring												
2.1.1) AN/SPN-41 Electronic Drawer Assembly (LCE) - NonOrganic (11)	6 / 1.712	2 / 1.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 3.001
Subtotal: Recurring	*- / 1.712*	*- / 1.289*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 3.001*
Subtotal: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418	*6 / 1.712*	*2 / 1.289*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*8 / 3.001*
Subtotal: Procurement, All Modification Items	*- / 1.712*	*- / 1.289*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 3.001*
Support *(All Modification Items)*												
3.1) Integrated Logistics	- / 0.086	- / 0.086	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.172
3.2) Production Engineering	- / 0.388	- / 0.206	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.594
Subtotal: Support	*- / 0.474*	*- / 0.292*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.766*
Installation												
Modification Item 1 of 1: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418	- / 1.740	- / 0.000	- / 0.800	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.540
Subtotal: Installation	*- / 1.740*	*- / -*	*- / 0.800*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.540*
Total												
Total Cost (Procurement + Support + Installation)	**3.926**	**1.581**	**0.800**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**6.307**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418

Manufacturer Information

Manufacturer Name: NAWCAD | Manufacturer Location: Webster Field, St. Inigoes, MD

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019						
Delivery Dates	Dec 2019						

Installation Information

Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-41 Electronic Drawer Assembly (LCE)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 1.740	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 1.740
FY 2019	- / -	- / -	2 / 0.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.800
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	6 / 1.740	- / -	2 / 0.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 2.540

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	6	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Footnotes:

(11) AN/SPN-41 Electronic Drawer Assembly (LCE) inventory objective is (20) with 14 procurements and 12 installations occurring in PY - FY16 are funded in BLI 2832. Inventory objective changed from 19 to 20 due to one of the original EDA units that was used, as intended, for initial system testing (including shock and vibe). When completed this type testing usually results in a unit that is damaged beyond acceptable repair. It should not have been counted as an End Item for installation in the Fleet once testing was completed.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 7 / AN/SPN-46 Block IV (PN420)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3.132	14.187	16.195	6.471	0.000	6.471	12.399	20.849	15.681	9.714	16.278	114.906
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3.132	14.187	16.195	6.471	0.000	6.471	12.399	20.849	15.681	9.714	16.278	114.906
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3.132**	**14.187**	**16.195**	**6.471**	**0.000**	**6.471**	**12.399**	**20.849**	**15.681**	**9.714**	**16.278**	**114.906**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPN-46 Block IV Precision Approach Landing System (PALS) Block IV upgrade is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card
Assemblies (CCAs). This effort is designed to extend the supportability of the AN/SPN-46 beyond its current design life that has been exceeded. If this effort is not accomplished, replacement parts will not be available to support the
fielded AN/SPN-46 systems, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft carrier. Each BLK IV will be comprised of the upgraded ACIO CCA, 2500 CCA, Transmitter, and Pedestal.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 7 / AN/SPN-46 Block IV (PN420)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs and selected shore sites	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-46 Block IV (PN420)												
B Kits												
Recurring												
1.1.1) AN/SPN-46 Block IV: Power Supply/Circuit Card Kit - NonOrganic	- / -	3 / 0.976	4 / 1.328	2 / 0.677	- / -	2 / 0.677	3 / 1.036	1 / 0.352	2 / 0.718	- / -	- / -	15 / 5.087
1.1.2) AN/SPN-46 Block IV: Pedestal/Transmitter - NonOrganic (12)	- / -	3 / 10.565	3 / 10.781	- / -	- / -	- / -	1 / 3.739	3 / 11.440	2 / 7.780	1 / 3.968	2 / 8.094	15 / 56.367
Subtotal: Recurring	*- / 0.000*	*- / 11.541*	*- / 12.109*	*- / 0.677*	*- / -*	*- / 0.677*	*- / 4.775*	*- / 11.792*	*- / 8.498*	*- / 3.968*	*- / 8.094*	*- / 61.454*
Subtotal: AN/SPN-46 Block IV (PN420)	*- / -*	*6 / 11.541*	*7 / 12.109*	*2 / 0.677*	*- / -*	*2 / 0.677*	*4 / 4.775*	*4 / 11.792*	*4 / 8.498*	*1 / 3.968*	*2 / 8.094*	*30 / 61.454*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 11.541*	*- / 12.109*	*- / 0.677*	*- / -*	*- / 0.677*	*- / 4.775*	*- / 11.792*	*- / 8.498*	*- / 3.968*	*- / 8.094*	*- / 61.454*
Support *(All Modification Items)*												
2.1) Integrated Logistics Support	- / 1.214	- / 1.347	- / 1.436	- / 1.465	- / -	- / 1.465	- / 0.792	- / 0.808	- / 0.824	- / 0.561	- / 0.581	- / 9.028
2.2) Production Engineering	- / 1.668	- / 1.176	- / 2.005	- / 2.045	- / -	- / 2.045	- / 2.086	- / 3.549	- / 3.620	- / 1.347	- / 2.332	- / 19.828
2.3) Quality Assurance	- / 0.250	- / 0.123	- / 0.127	- / 0.324	- / -	- / 0.324	- / 0.264	- / 0.202	- / 0.206	- / 0.210	- / 0.438	- / 2.144
2.4) Acceptance Test and Evaluation	- / -	- / -	- / 0.254	- / 0.256	- / -	- / 0.256	- / 0.265	- / 0.203	- / 0.207	- / -	- / -	- / 1.185
Subtotal: Support	*- / 3.132*	*- / 2.646*	*- / 3.822*	*- / 4.090*	*- / -*	*- / 4.090*	*- / 3.407*	*- / 4.762*	*- / 4.857*	*- / 2.118*	*- / 3.351*	*- / 32.185*
Installation												
Modification Item 1 of 1: AN/SPN-46 Block IV (PN420)	- / 0.000	- / 0.000	- / 0.264	- / 1.704	- / 0.000	- / 1.704	- / 4.217	- / 4.295	- / 2.326	- / 3.628	- / 4.833	- / 21.267
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 0.264*	*- / 1.704*	*- / -*	*- / 1.704*	*- / 4.217*	*- / 4.295*	*- / 2.326*	*- / 3.628*	*- / 4.833*	*- / 21.267*
Total												
Total Cost (Procurement + Support + Installation)	**3.132**	**14.187**	**16.195**	**6.471**	**0.000**	**6.471**	**12.399**	**20.849**	**15.681**	**9.714**	**16.278**	**114.906**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 7 / AN/SPN-46 Block IV (PN420)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SPN-46 Block IV (PN420)

Manufacturer Information

Manufacturer Name: Sierra Nevada Corporation	Manufacturer Location: Sierra, Nevada
Administrative Leadtime *(in Months)*: 4	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	
Delivery Dates	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025	

Manufacturer Name: Sierra Nevada Corporation	Manufacturer Location: Sierra, Nevada
Administrative Leadtime *(in Months)*: 7	Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025
Delivery Dates		Apr 2022	Apr 2023	Apr 2024	Apr 2025	Apr 2026	Apr 2027

Installation Information

Method of Implementation: Method:: Installation Name: Installation Group Name

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	3 / 0.264	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.264
FY 2020	- / -	- / -	- / -	4 / 1.704	0 / 0.000	4 / 1.704	- / -	- / -	- / -	- / -	0 / 0.000	4 / 1.704
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.601	- / -	- / -	- / -	0 / 0.000	2 / 1.601
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.601	- / -	- / -	0 / 0.000	3 / 1.601
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.110	- / -	0 / 0.000	1 / 1.110
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.537	0 / 0.000	2 / 0.537
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	3 / 0.264	4 / 1.704	0 / 0.000	4 / 1.704	2 / 1.601	3 / 1.601	1 / 1.110	2 / 0.537	0 / 0.000	15 / 6.817

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	2	1	-	-	2	2	-	-	1	1	-	-	1	2	-	-	-	1	-	-	-	2	-	-	15
Out	-	-	-	-	-	-	2	1	-	-	2	2	-	-	1	1	-	-	1	2	-	-	-	1	-	-	-	2	-	-	15

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 7 / AN/SPN-46 Block IV (PN420)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SPN-46 Block IV (PN420)

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/SPN-46 Block IV: Pedestal/Transmitter

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.616	- / -	- / -	- / -	0 / 0.000	3 / 2.616
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.694	- / -	- / -	0 / 0.000	3 / 2.694
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.216	- / -	0 / 0.000	1 / 1.216
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.091	0 / 0.000	3 / 3.091
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.888	2 / 1.888
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.975	1 / 0.975
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.970	2 / 1.970
Total	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.616	3 / 2.694	1 / 1.216	3 / 3.091	5 / 4.833	15 / 14.450

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	2	1	-	-	1	-	-	-	3	-	5	15
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	2	1	-	-	1	-	-	-	3	-	5	15

Footnotes:

(12) SPN-46 Block IV upgrade broken into two parts due to complexity of upgrade and difference in lead time per component.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 8 / AN/SPN-35 Block I (PN421)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	4.628	4.623	0.000	4.623	9.748	11.280	5.983	3.509	0.000	39.771
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	4.628	4.623	0.000	4.623	9.748	11.280	5.983	3.509	0.000	39.771
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**4.628**	**4.623**	**0.000**	**4.623**	**9.748**	**11.280**	**5.983**	**3.509**	**0.000**	**39.771**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This modification upgrades the AN/SPN-35C to Block 1. AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is used for Mode III aircraft recovery which ensures the safe approach and landing of fixed-wing aircraft and various helicopters during adverse weather & night conditions. The AN/SPN-35C Block I upgrade includes replacement of common failure items, obsolete components, and analog system components. Block I will ensure the availability of, and extend the service life of the AN/SPN-35. The inventory objective for this item is 12. PMA-213 configuration control board approves inventory objectives.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 8 / AN/SPN-35 Block I (PN421)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: LHA/LHD class ships	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-35 Block I (PN421)												
B Kits												
Recurring												
2.1.1) AN/SPN-35 Block I - NonOrganic [13]	- / -	- / -	2 / 3.153	2 / 3.215	- / -	2 / 3.215	3 / 4.918	4 / 6.689	1 / 1.706	- / -	- / -	12 / 19.681
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 3.153*	*- / 3.215*	*- / -*	*- / 3.215*	*- / 4.918*	*- / 6.689*	*- / 1.706*	*- / -*	*- / 0.000*	*- / 19.681*
Subtotal: AN/SPN-35 Block I (PN421)	*- / -*	*- / -*	*2 / 3.153*	*2 / 3.215*	*- / -*	*2 / 3.215*	*3 / 4.918*	*4 / 6.689*	*1 / 1.706*	*- / -*	*- / -*	*12 / 19.681*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 3.153*	*- / 3.215*	*- / -*	*- / 3.215*	*- / 4.918*	*- / 6.689*	*- / 1.706*	*- / -*	*- / 0.000*	*- / 19.681*
Support *(All Modification Items)*												
3.1) Integrated Logistics	- / -	- / -	- / 0.450	- / 0.566	- / -	- / 0.566	- / 0.397	- / 0.404	- / 0.412	- / 0.420	- / -	- / 2.649
3.2) Production Engineering	- / -	- / -	- / 1.025	- / 0.842	- / -	- / 0.842	- / 2.235	- / 3.032	- / 2.303	- / 1.320	- / -	- / 10.757
3.3) Quality Assurance	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.066	- / 0.067	- / 0.069	- / 0.070	- / -	- / 0.272
Subtotal: Support	*- / 0.000*	*- / -*	*- / 1.475*	*- / 1.408*	*- / -*	*- / 1.408*	*- / 2.698*	*- / 3.503*	*- / 2.784*	*- / 1.810*	*- / 0.000*	*- / 13.678*
Installation												
Modification Item 1 of 1: AN/SPN-35 Block I (PN421)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.132	- / 1.088	- / 1.493	- / 1.699	- / 0.000	- / 6.412
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.132*	*- / 1.088*	*- / 1.493*	*- / 1.699*	*- / 0.000*	*- / 6.412*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**4.628**	**4.623**	**0.000**	**4.623**	**9.748**	**11.280**	**5.983**	**3.509**	**0.000**	**39.771**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 8 / AN/SPN-35 Block I (PN421)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SPN-35 Block I (PN421)

Manufacturer Information

Manufacturer Name: NAWCAD	Manufacturer Location: St. Inigoes, MD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 16

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates			Apr 2022	Apr 2023	Apr 2024	Apr 2025	Apr 2026

Installation Information

Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-35 Block I

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.066	- / -	- / -	- / -	0 / 0.000	2 / 1.066
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.066	- / -	- / -	- / -	0 / 0.000	2 / 1.066
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.088	1 / 0.746	- / -	0 / 0.000	3 / 1.834
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.747	2 / 1.132	0 / 0.000	4 / 1.879
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.567	0 / 0.000	1 / 0.567
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.132	2 / 1.088	3 / 1.493	3 / 1.699	0 / 0.000	12 / 6.412

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	1	1	1	-	1	1	1	1	1	-	-	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	1	1	1	-	1	1	1	1	1	-	-	12

Footnotes:

(13) Program originally had funding to begin in 2019, but delayed to FY20 due to technical issues with the SPN-46 Block IV. FY20 procurements will occur in FY21 and be delivered/installed in FY22.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 9 / AN/SPN-50(V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	15.840	31.572	0.000	31.572	35.372	54.093	56.173	56.697	68.972	318.719
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	15.840	31.572	0.000	31.572	35.372	54.093	56.173	56.697	68.972	318.719
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**15.840**	**31.572**	**0.000**	**31.572**	**35.372**	**54.093**	**56.173**	**56.697**	**68.972**	**318.719**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Shipboard Air Traffic Radar (SATR) (AN/SPN-50(V)1)

The "National Defense Strategy of the United States of America" calls for military forces to assure allies and friends, dissuade potential adversaries, deter aggression and counter coercion, and defeat adversaries in order to accomplish our national objectives. The Shipboard Air Traffic Radar (SATR) AN/SPN-50(V)1 (hereinafter referred to as AN/SPN-50(V)1) supports these objectives and will be the primary Air Traffic Control (ATC) surveillance radar onboard Nimitz Class Aircraft Carrier (CVN) and Amphibious (LHA and LHD (LH)) type ships. The launch and recovery of aircraft, to include ATC, is a primary function of aircraft carriers and amphibious landing platforms. The surveillance function provides weather and radar data to air traffic controllers supporting aviation operations of all Navy, Marine Corps, joint and allied aviation assets within the assigned airspace. This data is utilized by air traffic controllers to provide a variety of ATC services such as ATC radar approach and departure services (which includes aircraft separation), airspace monitoring, navigational assistance, emergency vectoring, traffic calls, and vectoring and sequencing to the final approach point. Reliable and accurate ATC surveillance radar enhances overall mission and training effectiveness and safety for aircrews and aircraft alike. The AN/SPN-50(V)1 Capability D Document was signed March 2015 and Milestone B was achieved September 2015, at which time the Milestone Decision Authority (MDA) designated the AN/SPN-50(V)1 program as an ACAT IV(T). Milestone C is planned for 3rd quarter FY 2020 and IOC is planned for 4th quarter FY 2022. The AN/SPN-50(V)1 inventory objective is 25 systems (5 LRIPs, and 20 FRP). Twenty-one systems are schedule to be procured with Other Procurement, Navy, funding and 4 are scheduled to be procured with Ship Conversion, Navy, funding.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 9 / AN/SPN-50(V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-50(V)1												
B Kits												
Recurring												
2.1.1) SATR (SPN-50) - NonOrganic	- / -	- / -	1 / 10.756	2 / 20.926	- / -	2 / 20.926	2 / 21.344	4 / 39.712	4 / 38.505	4 / 39.275	4 / 40.521	21 / 211.039
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 10.756*	*- / 20.926*	*- / -*	*- / 20.926*	*- / 21.344*	*- / 39.712*	*- / 38.505*	*- / 39.275*	*- / 40.521*	*- / 211.039*
Subtotal: AN/SPN-50(V)1	*- / -*	*- / -*	*1 / 10.756*	*2 / 20.926*	*- / -*	*2 / 20.926*	*2 / 21.344*	*4 / 39.712*	*4 / 38.505*	*4 / 39.275*	*4 / 40.521*	*21 / 211.039*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 10.756*	*- / 20.926*	*- / -*	*- / 20.926*	*- / 21.344*	*- / 39.712*	*- / 38.505*	*- / 39.275*	*- / 40.521*	*- / 211.039*
Support *(All Modification Items)*												
3.1) Support Equipment	- / -	- / -	- / 0.161	- / 0.328	- / -	- / 0.328	- / 0.335	- / 0.683	- / 0.697	- / 0.711	- / 0.720	- / 3.635
3.2) Integrated Logistics Support (14)	- / -	- / -	- / 1.198	- / 1.902	- / -	- / 1.902	- / 2.130	- / 2.118	- / 0.527	- / 1.331	- / 1.396	- / 10.602
3.3) Production Engineering (15)	- / -	- / -	- / 3.725	- / 6.901	- / -	- / 6.901	- / 8.473	- / 9.782	- / 7.953	- / 8.112	- / 11.796	- / 56.742
Subtotal: Support	*- / 0.000*	*- / -*	*- / 5.084*	*- / 9.131*	*- / -*	*- / 9.131*	*- / 10.938*	*- / 12.583*	*- / 9.177*	*- / 10.154*	*- / 13.912*	*- / 70.979*
Installation												
Modification Item 1 of 1: AN/SPN-50(V)1	- / 0.000	- / 0.000	- / 0.000	- / 1.515	- / 0.000	- / 1.515	- / 3.090	- / 1.798	- / 8.491	- / 7.268	- / 14.539	- / 36.701
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 1.515*	*- / -*	*- / 1.515*	*- / 3.090*	*- / 1.798*	*- / 8.491*	*- / 7.268*	*- / 14.539*	*- / 36.701*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**15.840**	**31.572**	**0.000**	**31.572**	**35.372**	**54.093**	**56.173**	**56.697**	**68.972**	**318.719**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 9 / AN/SPN-50(V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SPN-50(V)1

Manufacturer Information

Manufacturer Name: TBD	Manufacturer Location: TBD 6
Administrative Leadtime *(in Months)*: 8	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		May 2020	May 2021	May 2022	May 2023	May 2024	May 2025
Delivery Dates		May 2021	May 2022	May 2023	May 2024	May 2025	May 2026

Installation Information

Method of Implementation: [none specified]:: Installation Name: SATR (SPN-50)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	1 / 1.515	0 / 0.000	1 / 1.515	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.515
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.090	- / -	- / -	- / -	0 / 0.000	2 / 3.090
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.798	1 / 1.659	- / -	0 / 0.000	2 / 3.457
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 6.832	- / -	0 / 0.000	4 / 6.832
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 7.126	4 / 7.126
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 7.268	0 / 0.000	4 / 7.268
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 7.413	4 / 7.413
Total	- / -	- / -	- / -	1 / 1.515	0 / 0.000	1 / 1.515	2 / 3.090	1 / 1.798	5 / 8.491	4 / 7.268	8 / 14.539	21 / 36.701

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	1	-	1	-	2	2	-	-	-	4	8	21
Out	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	1	-	1	-	2	2	-	-	-	4	8	21

Footnotes:

(14) ILS efforts include training courses, courseware management, tech pub management, and supply support planning. These efforts are planned to significantly reduce once the program reaches Material Support Date in FY 2024.

(15) Production engineering (PE) provides SW support of production required changes, engineering support of the production effort, and ongoing installation support. PE increase from FY 2020 to FY 2021 is due to production quantity increase. PE increase from FY 2022 to FY 2023 is due to the award of the follow on Full Rate Production (FRP) contract.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 10 / AN/SPN-35 Block II (PN422)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.257	22.977	45.988	82.222
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.257	22.977	45.988	82.222
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**13.257**	**22.977**	**45.988**	**82.222**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This modification upgrades the AN/SPN-35C to Block II. AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is use for Mode III aircraft recovery which ensures the safe approach and landing of fixed wing aircraft and various helicopters during adverse weather and night conditions. Block II will ensure the availability of, and extend the service life of the AN/SPN-35C. The inventory objective for this item is 14. PMA-213 configuration control board approves the inventory objective.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 10 / AN/SPN-35 Block II (PN422)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: LHD/LHA class ships	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-35 Block II (PN422)												
B Kits												
Recurring												
1.1.1) End Item - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 6.803	5 / 17.348	7 / 25.128	14 / 49.279
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 6.803*	*- / 17.348*	*- / 25.128*	*- / 49.279*
Subtotal: AN/SPN-35 Block II (PN422)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*2 / 6.803*	*5 / 17.348*	*7 / 25.128*	*14 / 49.279*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 6.803*	*- / 17.348*	*- / 25.128*	*- / 49.279*
Support *(All Modification Items)*												
2.1) Production Engineering	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.751	- / 4.181	- / 11.975	- / 18.907
2.2) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.676	- / 0.420	- / 1.615	- / 5.711
2.3) Quality Assurance	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.027	- / 0.070	- / 0.294	- / 0.391
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 6.454*	*- / 4.671*	*- / 13.884*	*- / 25.009*
Installation												
Modification Item 1 of 1: AN/SPN-35 Block II (PN422)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.958	- / 6.976	- / 7.934
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.958*	*- / 6.976*	*- / 7.934*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**13.257**	**22.977**	**45.988**	**82.222**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 10 / AN/SPN-35 Block II (PN422)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SPN-35 Block II (PN422)

Manufacturer Information

Manufacturer Name: NAWC	Manufacturer Location: St. Inigoes, NAS Patuxent River MD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 16

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates						Dec 2024	Dec 2025
Delivery Dates						Apr 2025	Apr 2026

Installation Information

Method of Implementation: AIT:: Installation Name: End Item

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.958	0 / 0.000	2 / 0.958
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.443	5 / 2.443
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 4.533	7 / 4.533
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.958	12 / 6.976	14 / 7.934

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	12	14
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	12	14

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 11 / AN/SPN-46 Block V (PN423)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.510	7.613	8.516	12.722	35.361
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.510	7.613	8.516	12.722	35.361
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**6.510**	**7.613**	**8.516**	**12.722**	**35.361**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPN-46 Block V upgrade targets aging and obsolete hardware and software components within the carrier landing system and replaces them with modernized and supportable components. Blk V consists of a major AN/
SPN-46 operational software upgrade along with a refresh of numerous Commercial Off The Shelf (COTS) equipment subassemblies. Planned upgrades are updates to the radar's obsolete radar processor circuit card assemblies (CCAs) with new generation CCAs, upgrading the radar's Real Time Operating System (RTOS) with a current and supportable RTOS, and optimizing and reconfiguring the radar's software into a logical, modular format. The radar's top two degraders, the Radar Alignment Mast (RAM) pole and the TS-3098 test set, will be modified with less complex, higher reliability designs. Hardware changes will include reducing reliability issues caused by outdated bus systems and IP based substructures and provide as overall system hardening to mitigate external interference issues. The software architecture redesign and optimization will increase modularity and operational efficiency as well as implement M-Code and resolve cyber security related issues inherent with the current system.

[AN/SPN-46 Block V] An AN/SPN-46 Block V Precision Approach Landing System (PALS) Block V upgrade is designed to correct known obsolescence issue with COTS rad processor circuit cards. This creates upgraded software for the SPN-46 obsolete operating system and implements Risk Management Framework Cyber-Security controls. These upgrades are required to keep the system supportable/operational through 2040 to support legacy fleet aircraft precision landing requirements.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 11 / AN/SPN-46 Block V (PN423)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVNs	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/SPN-46 Block V (PN423)												
B Kits												
Recurring												
1.1.1) AN/SPN-46 Block V - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.058	3 / 2.099	5 / 3.568	5 / 3.640	16 / 11.365
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.058*	*- / 2.099*	*- / 3.568*	*- / 3.640*	*- / 11.365*
Subtotal: AN/SPN-46 Block V (PN423)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*3 / 2.058*	*3 / 2.099*	*5 / 3.568*	*5 / 3.640*	*16 / 11.365*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.058*	*- / 2.099*	*- / 3.568*	*- / 3.640*	*- / 11.365*
Support *(All Modification Items)*												
2.1) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.090	- / 1.112	- / 0.473	- / 0.828	- / 3.503
2.2) Production Engineering	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.295	- / 2.840	- / 2.706	- / 3.096	- / 11.937
2.3) Quality Assurance	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.067	- / 0.069	- / 0.070	- / 0.144	- / 0.350
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.452*	*- / 4.021*	*- / 3.249*	*- / 4.068*	*- / 15.790*
Installation												
Modification Item 1 of 1: AN/SPN-46 Block V (PN423)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.493	- / 1.699	- / 5.014	- / 8.206
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.493*	*- / 1.699*	*- / 5.014*	*- / 8.206*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**6.510**	**7.613**	**8.516**	**12.722**	**35.361**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2830 / Afloat ATC Equipment	**Modification Number / Title:** 11 / AN/SPN-46 Block V (PN423)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/SPN-46 Block V (PN423)

Manufacturer Information

Manufacturer Name: NAWC	Manufacturer Location: St. Inigoes, NAS Patuxent River MD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 16

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates					Dec 2022	Dec 2023	Dec 2024
Delivery Dates					Apr 2023	Apr 2024	Apr 2025

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/SPN-46 Block V

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.493	- / -	0 / 0.000	3 / 1.493
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.699	0 / 0.000	3 / 1.699
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.708	5 / 2.708
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.306	5 / 2.306
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.493	3 / 1.699	10 / 5.014	16 / 8.206

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	10	16
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	10	16

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2851 / ID Systems

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604777N
Line Item MDAP/MAIS Code: N/A		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	314.343	22.777	25.506	23.815	0.000	23.815	48.381	58.509	57.862	59.071	167.552	777.816
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	314.343	22.777	25.506	23.815	0.000	23.815	48.381	58.509	57.862	59.071	167.552	777.816
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**314.343**	**22.777**	**25.506**	**23.815**	**0.000**	**23.815**	**48.381**	**58.509**	**57.862**	**59.071**	**167.552**	**777.816**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Identification Systems program funds procurements, Engineering Change Proposals (ECPs) to address obsolescence and fact of life changes, installations, and certifications for the following Mark XII / Mark XIIA systems: AN/UPX-37, AN/UPX-41, and AN/UPX-45 Digital Interrogators (DIs), AN/APX-118 and AN/APX-123 Common Digital Transponders (CXPs), AN/UPX-29 Interrogator System (comprised of Interrogator Set AN/UPX-24, OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment), AN/UPX-46 Interrogator System (comprised of CP-2819/UPX Processor and Mark XIIA equipment), Identification Friend or Foe (IFF) support equipment, and AN/UPX-34A Radar Track Discriminator System (RTDS).

The Air Traffic Control Radio Beacon System, IFF, Mark XII/XIIA System (AIMS) is a DoD directed tri-service program designed to provide a universal air traffic control radar beacon system compatible with the National Airspace System program. It provides a secure identification system for military use on all combatant ships, selected auxiliaries, patrol craft, and selected Coast Guard ships by allowing all friendly forces to identify each other and neutral forces. The Mark XII/XIIA system supports several missions such as anti-air warfare, aerial bombardment, and naval attack.

The OE-120()/UPX antenna radiates Identification Friend or Foe (IFF) encoded radio frequency (RF) challenge pulses into space and receives the resultant IFF encoded RF transponder replies from space. Current surface ship OE-120()/UPX antenna systems will receive upgrade kits to improve system R&M. The upgrade kits will use open architecture and current technology that allows for continued production and future growth. An Engineering Change Proposal was awarded using RDT&E (PU 0676) funds for the Original Equipment Manufacturer to deliver an Engineering Design Model for shipboard test and evaluation in fiscal year 2018.

Modernization of the DDG 1000 Zumwalt Class IFF Sensor Suite includes procurement activities, product improvements, and engineering changes for three electronically scanned array (ESA) antennas, one UPX-42(C) Interrogator, and three RT-1912(C)/APX Transponders.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2851 / ID Systems

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** 0604777N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-3a	1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032) (Reliability)				- / 61.706	- / 2.969	- / 1.181	- / 0.762	- / 0.000	- / 0.762
P-3a	2 / AN/UPX 24 (V) Mode S (MT035) (Capability Improvement)				- / 42.136	- / 5.293	- / 8.319	- / 9.939	- / 0.000	- / 9.939
P-3a	3 / Mark XII Mode 5 (MT037) (Capability Improvement)				- / 172.717	- / 4.137	- / 2.682	- / 0.594	- / 0.000	- / 0.594
P-3a	4 / Mode S Digital Interrogator (MT040) (Capability Improvement)				- / 37.784	- / 7.104	- / 8.249	- / 7.423	- / 0.000	- / 7.423
P-3a	5 / OE-120/UPX Antenna (MT041) (Reliability)				- / 0.000	- / 3.274	- / 5.075	- / 5.097	- / 0.000	- / 5.097
P-3a	6 / AN/UPX-46 Processor System (MT042) (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043) (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	8 / AN/UPX-36 Replacement (MT044) (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	9 / DDG 1000 Modernization (MT045) (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 314.343**	**- / 22.777**	**- / 25.506**	**- / 23.815**	**- / 0.000**	**- / 23.815**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-3a	1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032) (Reliability)				- / 0.777	- / 0.793	- / 0.000	- / 0.000	- / 0.000	- / 68.188
P-3a	2 / AN/UPX 24 (V) Mode S (MT035) (Capability Improvement)				- / 11.350	- / 10.660	- / 11.395	- / 9.157	- / 16.244	- / 124.493
P-3a	3 / Mark XII Mode 5 (MT037) (Capability Improvement)				- / 0.890	- / 0.618	- / 0.631	- / 0.781	- / 0.787	- / 183.837
P-3a	4 / Mode S Digital Interrogator (MT040) (Capability Improvement)				- / 9.286	- / 12.035	- / 9.683	- / 8.835	- / 13.024	- / 113.423
P-3a	5 / OE-120/UPX Antenna (MT041) (Reliability)				- / 7.257	- / 7.407	- / 6.618	- / 10.669	- / 83.857	- / 129.254
P-3a	6 / AN/UPX-46 Processor System (MT042) (Reliability)				- / 18.821	- / 14.078	- / 15.691	- / 13.403	- / 26.273	- / 88.266
P-3a	7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043) (Reliability)				- / 0.000	- / 3.047	- / 4.081	- / 2.643	- / 11.604	- / 21.375
P-3a	8 / AN/UPX-36 Replacement (MT044) (Reliability)				- / 0.000	- / 7.771	- / 9.063	- / 12.783	- / 15.363	- / 44.980
P-3a	9 / DDG 1000 Modernization (MT045) (Modernization)				- / 0.000	- / 2.100	- / 0.700	- / 0.800	- / 0.400	- / 4.000
P-40	**Total Gross/Weapon System Cost**				**- / 48.381**	**- / 58.509**	**- / 57.862**	**- / 59.071**	**- / 167.552**	**- / 777.816**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The purpose of the AN/UPX-41(C) Digital Interrogators (DI) and AN/APX-123 Common Digital Transponder (CXP) program is to replace 20-25 year old hardware and software with reliability and maintenance enhancements through the use of Commercial Off The Shelf / Non Developmental Item COTS/NDI form/fit/function improvements. Incorporation of the Mark XIIA (Mode 5) capability occurred in FY08 and changes nomenclatures from AN/UPX-37 and AN/APX-118(V) to AN/UPX-41(C) and AN/APX-123(V), respectively. Incorporation of the Mark XIIA (Mode S) capability into the AN/UPX-41(C) DI is currently ongoing and will change the DI nomenclature from AN/UPX-41(C) to AN/UPX-45(C).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2851 / ID Systems	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604777N
Line Item MDAP/MAIS Code: N/A		

AN/UPX-24(V) Field Changes will provide hardware updates to accommodate Mode 5 and Mode S functionality in fielded systems. AN/UPX-24(V) Mode S upgrades will provide improved shipboard combat identification by increasing the probability of identification of commercial and neutral aircraft. The AN/UPX-29(V) Interrogator System is deployed on high capability, state of the art surface platforms that require IFF operational performance beyond that provided by a standard Mark XII system for combat identification. Mark XIIA Mode 5 and Mode S provide improved secure cooperative combat identification throughout IFF. Mode 5 and Mode S are product improvements designed to be installed through engineering changes to digital Mark XII interrogators and transponders including AN/APX-118/123(V), AN/UPX-37/41(C), and AN/UPX-24(V).

AN/UPX-46 field changes will provide hardware updates to IFF Interrogator/Transponder Systems fielded on LCS 1 and LCS 2 ship class variants, and United States Coast Guard (USCG) ship classes which are currently equipped with AN/UPX-29A or AN/UPX-37 (with Target Data Extractor) interrogator system configurations and Mark XII transponder systems. The hardware updates will reduce unique IFF configurations by installing common hardware with Mark XIIA capability.

AN/UPX-34A Radar Track Discriminator System (RTDS) field changes will provide hardware and software upgrades to fielded systems that will increase system performance and incorporate "other service" target libraries into the system's target database. The RTDS is a Non-Cooperative Target Recognition (NCTR) system.

OE-120()/UPX kits provide hardware and software upgrades to 40-year old fielded systems to improve system Reliability and Maintainability (R&M) by replacing obsolete assemblies and units. The OE-120()/UPX kits use open architecture and current technology that allows for continued production and future growth.

AN/UPX-36 replacement will install AN/UPX-46 Interrogator Systems on the twelve ships in the LSD 41 and LSD 49 ship classes. The replacement program will reduce unique IFF Interrogator Systems by installing common hardware configurations with Mark XIIA capability.

The DDG 1000 Zumwalt Class IFF Sensor Suite requires modernization, through product improvements and engineering changes, in order to implement product support elements, mitigate obsolescence, and incorporate cyber resiliency.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	61.706	2.969	1.181	0.762	0.000	0.762	0.777	0.793	0.000	0.000	0.000	68.188
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	61.706	2.969	1.181	0.762	0.000	0.762	0.777	0.793	0.000	0.000	0.000	68.188
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**61.706**	**2.969**	**1.181**	**0.762**	**0.000**	**0.762**	**0.777**	**0.793**	**0.000**	**0.000**	**0.000**	**68.188**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Current Mark XII transponder systems no longer meet operational reliability and maintainability (R&M) requirements due to use beyond their intended life cycle and they suffer a high cost of ownership due to parts obsolescence. Current surface ship Mark XII transponders will be replaced to continue incremental digital and R&M upgrades to the Mark XII IFF system. The common digital transponder uses an open architecture that allows for future growth, including Mode 5 (AN/APX-123(V)) and Mode S which was incorporated into the production line beginning with the FY 2005 procurement. Inventory Objective of 521 is derived from the Naval Data Environment (NDE) database, the Ships & Aircraft Supplemental Data Table (SASDT) and ship/submarine Ship Program Manager (SPM) procurement plans and schedules. Incorporation of the Mark XIIA (Mode 5) capability occurred in FY08 and changed the nomenclature from AN/APX-118(V) to AN/APX-123(V). LRIP AN/APX-123(V) units were installed and operated in legacy-only modes until successful completion of the Mode 5 OPEVAL (MT037) and Full Rate Production decision. Full Rate Production was approved July 2012.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/APX-118/AN/APX-123(V)	**Modification Type:** Reliability	**Related RDT&E PEs:** 0604777N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Mark XII/ Mark XIIA Common Digital Transponder (MT032)												
B Kits												
Recurring												
1.1.1) Equipment - NonOrganic (1)	415 / 22.029	46 / 2.107	15 / 0.748	15 / 0.762	- / -	15 / 0.762	15 / 0.777	15 / 0.793	- / -	- / -	- / -	521 / 27.216
Subtotal: Recurring	*- / 22.029*	*- / 2.107*	*- / 0.748*	*- / 0.762*	*- / -*	*- / 0.762*	*- / 0.777*	*- / 0.793*	*- / -*	*- / -*	*- / 0.000*	*- / 27.216*
Subtotal: Mark XII/ Mark XIIA Common Digital Transponder (MT032)	*415 / 22.029*	*46 / 2.107*	*15 / 0.748*	*15 / 0.762*	*- / -*	*15 / 0.762*	*15 / 0.777*	*15 / 0.793*	*- / -*	*- / -*	*- / -*	*521 / 27.216*
Subtotal: Procurement, All Modification Items	*- / 22.029*	*- / 2.107*	*- / 0.748*	*- / 0.762*	*- / -*	*- / 0.762*	*- / 0.777*	*- / 0.793*	*- / -*	*- / -*	*- / 0.000*	*- / 27.216*
Support *(All Modification Items)*												
2.1) ILS	- / 2.990	- / 0.013	- / 0.005	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.008
2.2) PE	- / 16.273	- / 0.627	- / 0.284	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 17.184
2.3) Product Improvement	- / 4.632	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.632
2.4) Acceptance, Test & Evaluation	- / 2.806	- / 0.020	- / 0.008	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.834
2.5) Depot	- / 0.010	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.010
2.6) Initial Training	- / 0.822	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.822
Subtotal: Support	*- / 27.533*	*- / 0.660*	*- / 0.297*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 28.490*
Installation												
Modification Item 1 of 1: Mark XII/ Mark XIIA Common Digital Transponder (MT032)	- / 12.144	- / 0.202	- / 0.136	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.482
Subtotal: Installation	*- / 12.144*	*- / 0.202*	*- / 0.136*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 12.482*
Total												
Total Cost (Procurement + Support + Installation)	**61.706**	**2.969**	**1.181**	**0.762**	**0.000**	**0.762**	**0.777**	**0.793**	**0.000**	**0.000**	**0.000**	**68.188**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Mark XII/ Mark XIIA Common Digital Transponder (MT032)

Manufacturer Information

Manufacturer Name: BAE Systems LP | Manufacturer Location: Greenlawn, NY

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022		
Delivery Dates	Jun 2019	Jun 2020	Jun 2021	Jun 2022	Jun 2023		

Installation Information

Method of Implementation: [none specified]:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	361 / 12.144	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	361 / 12.144
FY 2019	- / -	3 / 0.202	2 / 0.136	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.338
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	361 / 12.144	3 / 0.202	2 / 0.136	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	366 / 12.482

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	361	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366
Out	361	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366

Footnotes:

(1) Ancillary hardware procurements only require a 6 month production lead time. Current inventory objective is 521, which includes 9 additional units purchased in the prior years to provide to the Mode 5 program contractor as GFE and 146 purchased for Naval Surface Warfare Forces in FY18 (45), FY19 (41), and FY20-23 (15 per year). Procurements for Naval Surface Warfare will not be installed under BLI 2851.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 2 / AN/UPX 24 (V) Mode S (MT035)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	42.136	5.293	8.319	9.939	0.000	9.939	11.350	10.660	11.395	9.157	16.244	124.493
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	42.136	5.293	8.319	9.939	0.000	9.939	11.350	10.660	11.395	9.157	16.244	124.493
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**42.136**	**5.293**	**8.319**	**9.939**	**0.000**	**9.939**	**11.350**	**10.660**	**11.395**	**9.157**	**16.244**	**124.493**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:
Incorporation of a Mode S capability in the AN/UPX-24(V) to include an interface with a ship's Combat Systems. Inventory Objective of 123 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table and ship/submarine Ship Program Manager procurement plans and schedules.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 2 / AN/UPX 24 (V) Mode S (MT035)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/UPX-24(V)	**Modification Type:** Capability Improvement	**Related RDT&E PEs:** 0604777N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/UPX 24 (V) Mode S (MT035)												
B Kits												
Non-Recurring												
1.1.1) Equipment - NonOrganic [2]	22 / 2.548	5 / 0.862	17 / 3.265	21 / 3.945	- / -	21 / 3.945	17 / 4.155	14 / 3.472	16 / 4.032	9 / 2.304	2 / 0.520	123 / 25.103
Subtotal: Non-Recurring	*- / 2.548*	*- / 0.862*	*- / 3.265*	*- / 3.945*	*- / - /*	*- / 3.945*	*- / 4.155*	*- / 3.472*	*- / 4.032*	*- / 2.304*	*- / 0.520*	*- / 25.103*
Subtotal: AN/UPX 24 (V) Mode S (MT035)	*22 / 2.548*	*5 / 0.862*	*17 / 3.265*	*21 / 3.945*	*- / - /*	*21 / 3.945*	*17 / 4.155*	*14 / 3.472*	*16 / 4.032*	*9 / 2.304*	*2 / 0.520*	*123 / 25.103*
Subtotal: Procurement, All Modification Items	*- / 2.548*	*- / 0.862*	*- / 3.265*	*- / 3.945*	*- / - /*	*- / 3.945*	*- / 4.155*	*- / 3.472*	*- / 4.032*	*- / 2.304*	*- / 0.520*	*- / 25.103*
Support *(All Modification Items)*												
2.1) ILS	- / 3.215	- / 0.427	- / 0.669	- / 0.842	- / -	- / 0.842	- / 0.814	- / 0.793	- / 0.801	- / 0.779	- / 1.296	- / 9.636
2.2) PE [3]	- / 9.740	- / 1.824	- / 2.099	- / 3.083	- / -	- / 3.083	- / 3.111	- / 3.053	- / 3.044	- / 2.754	- / 7.271	- / 35.979
2.3) Product Improvement [4]	- / 24.374	- / 1.919	- / 1.677	- / 1.332	- / -	- / 1.332	- / 1.728	- / 1.754	- / 1.780	- / 1.807	- / 5.501	- / 41.872
2.4) Acceptance, Test & Evaluation	- / 1.235	- / 0.035	- / 0.025	- / 0.088	- / -	- / 0.088	- / 0.106	- / 0.097	- / 0.072	- / 0.090	- / 0.098	- / 1.846
2.5) Depot	- / 0.046	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.046
2.6) Initial Training	- / 0.274	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.274
Subtotal: Support	*- / 38.884*	*- / 4.205*	*- / 4.470*	*- / 5.345*	*- / - /*	*- / 5.345*	*- / 5.759*	*- / 5.697*	*- / 5.697*	*- / 5.430*	*- / 14.166*	*- / 89.653*
Installation												
Modification Item 1 of 1: AN/UPX 24 (V) Mode S (MT035)	- / 0.704	- / 0.226	- / 0.584	- / 0.649	- / 0.000	- / 0.649	- / 1.436	- / 1.491	- / 1.666	- / 1.423	- / 1.558	- / 9.737
Subtotal: Installation	*- / 0.704*	*- / 0.226*	*- / 0.584*	*- / 0.649*	*- / - /*	*- / 0.649*	*- / 1.436*	*- / 1.491*	*- / 1.666*	*- / 1.423*	*- / 1.558*	*- / 9.737*
Total												
Total Cost (Procurement + Support + Installation)	**42.136**	**5.293**	**8.319**	**9.939**	**0.000**	**9.939**	**11.350**	**10.660**	**11.395**	**9.157**	**16.244**	**124.493**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 2 / AN/UPX 24 (V) Mode S (MT035)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/UPX 24 (V) Mode S (MT035)

Manufacturer Information

Manufacturer Name: NAWCAD 4.11.2.1	Manufacturer Location: St. Inigoes, MD
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024	Dec 2025

Installation Information

Method of Implementation: AIT:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	15 / 0.704	4 / 0.226	- / -	- / -	- / -	- / -	- / -	3 / 0.106	- / -	- / -	0 / 0.000	22 / 1.036
FY 2019	- / -	- / -	5 / 0.584	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.584
FY 2020	- / -	- / -	- / -	17 / 0.649	0 / 0.000	17 / 0.649	- / -	- / -	- / -	- / -	0 / 0.000	17 / 0.649
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	21 / 1.436	- / -	- / -	- / -	0 / 0.000	21 / 1.436
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 1.385	- / -	- / -	0 / 0.000	17 / 1.385
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 1.666	- / -	0 / 0.000	14 / 1.666
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	16 / 1.423	0 / 0.000	16 / 1.423
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.257	9 / 1.257
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.301	2 / 0.301
Total	15 / 0.704	4 / 0.226	5 / 0.584	17 / 0.649	0 / 0.000	17 / 0.649	21 / 1.436	20 / 1.491	14 / 1.666	16 / 1.423	11 / 1.558	123 / 9.737

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	15	1	1	1	1	2	1	1	1	4	4	5	4	5	5	5	6	7	4	4	5	4	4	3	3	4	4	4	4	11	123
Out	15	1	1	1	1	2	1	1	1	4	4	5	4	5	5	5	6	7	4	4	5	4	4	3	3	4	4	4	4	11	123

Footnotes:

(2) Adjustment to procurements and installs are based on shift in ship availabilities and to align with PEO IWS and Aegis Modernization schedules. Increase from FY19 to FY20 is due to addition of the training interface processor to the composition of the Mode S AN/UPX-24(V). Increase from FY21 to FY22 unit cost is due to an additional obsolete component replacement. Current Inventory Objective is 123.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 2 / AN/UPX 24 (V) Mode S (MT035)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(3) Production Engineering fluctuates throughout the FYDP as the program transitions from less complex installs on small number of ship classes with limited combat system configurations some years to installs on multiple ship classes with various additional combat system configurations other years. Increase from FY20 to FY21 due to alignment of Mode S upgrades with Aegis Baseline 5.4 and Baseline 9 fielding plans.

(4) Product Improvement changes through the FYDP due to significant obsolescence in the AN/UPX-24 and resulting fleet modernization Engineering Change Proposal (ECP). An ECP to address obsolescence issues in the AN/UPX-24 will require system testing and re-qualification with Aegis and Ship Self Defense Systems (SSDS) combat systems for continued fielding. The fleet modernization ECP supports improvements in space, weight and power (SWAP), network hardening, and cyber security, and will result in a scalable IFF interrogator system for delivery to multiple ship classes; FFG(x), CVN-78, LHA(R), DDG, LPD, LHA, CG, and LHD.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 3 / Mark XII Mode 5 (MT037)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	172.717	4.137	2.682	0.594	0.000	0.594	0.890	0.618	0.631	0.781	0.787	183.837
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	172.717	4.137	2.682	0.594	0.000	0.594	0.890	0.618	0.631	0.781	0.787	183.837
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**172.717**	**4.137**	**2.682**	**0.594**	**0.000**	**0.594**	**0.890**	**0.618**	**0.631**	**0.781**	**0.787**	**183.837**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Mark XIIA Mode 5 provides improved secure cooperative combat identification throughout Identification Friend or Foe (IFF). Mode 5 is a product improvement which is designed to be installed via engineering changes to digital MarkXII interrogators and transponders including, AN/APX-118/123(V) Common Digital Transponder (CXP), AN/UPX-37/41/45 Digital Interrogator (DI), and AN/UPX-24(V). Procurements will include Cryptography, Long Lead Items, Low-Rate Initial Production (LRIP) Units, Full Rate Production units, Support/Test Equipment, and associated hardware and software changes for Fleet Modernization Plan (FMP) and non-FMP installations. Mode 5 is designed to be installed in all Navy ships which are currently Mode 4 IFF capable. Milestone C and LRIP was approved in July 2006 and Full Rate Production was approved in July 2012. In March 2007, Joint Requirements Oversight Council Memorandum (JROCM 047-07) endorsed a Mode 5 Joint Full Operational Capability in FY2020.

Procurement and installs differ by 108 units due to Naval Special Warfare Forces, which will be installing their own units.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 3 / Mark XII Mode 5 (MT037)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/APX-118/123(V), AN/UPX-37/41(C), AN/UPX-24(V)	**Modification Type:** Capability Improvement	**Related RDT&E PEs:** 0604777N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Mark XII Mode 5 (MT037)												
B Kits												
Non-Recurring												
1.1.1) Equipment - Organic - Organic	- / 3.775	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.775
1.1.2) Mode 5 CXP Systems/Kits - NonOrganic (5)	427 / 14.690	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	427 / 14.690
1.1.3) Mode 5 UPX-24(V) Kits - NonOrganic	110 / 7.970	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	110 / 7.970
1.1.4) Mode 5 DI Systems/ Kits - NonOrganic	293 / 11.970	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	293 / 11.970
Subtotal: Non-Recurring	*- / 38.405*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 38.405*
Subtotal: Mark XII Mode 5 (MT037)	*830 / 38.405*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*830 / 38.405*
Subtotal: Procurement, All Modification Items	*- / 38.405*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 38.405*
Support *(All Modification Items)*												
2.1) Support Equipment	- / 9.559	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 9.559
2.2) ILS (6)	- / 7.962	- / 0.183	- / 0.160	- / 0.058	- / -	- / 0.058	- / 0.070	- / 0.061	- / 0.062	- / 0.079	- / 0.118	- / 8.753
2.3) PE (7)	- / 53.907	- / 1.910	- / 1.618	- / 0.536	- / -	- / 0.536	- / 0.604	- / 0.557	- / 0.569	- / 0.702	- / 0.435	- / 60.838
2.4) Product Improvement	- / 13.364	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.364
2.5) Acceptance, Test & Evaluation	- / 6.430	- / 0.201	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.631
2.6) Initial Training	- / 0.517	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.517
Subtotal: Support	*- / 91.739*	*- / 2.294*	*- / 1.778*	*- / 0.594*	*- / -*	*- / 0.594*	*- / 0.674*	*- / 0.618*	*- / 0.631*	*- / 0.781*	*- / 0.553*	*- / 99.662*
Installation												
Modification Item 1 of 1: Mark XII Mode 5 (MT037)	- / 42.573	- / 1.843	- / 0.904	- / 0.000	- / 0.000	- / 0.000	- / 0.216	- / 0.000	- / 0.000	- / 0.000	- / 0.234	- / 45.770
Subtotal: Installation	*- / 42.573*	*- / 1.843*	*- / 0.904*	*- / -*	*- / -*	*- / -*	*- / 0.216*	*- / -*	*- / -*	*- / -*	*- / 0.234*	*- / 45.770*
Total												
Total Cost (Procurement + Support + Installation)	**172.717**	**4.137**	**2.682**	**0.594**	**0.000**	**0.594**	**0.890**	**0.618**	**0.631**	**0.781**	**0.787**	**183.837**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 3 / Mark XII Mode 5 (MT037)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Mark XII Mode 5 (MT037)

Manufacturer Information

Manufacturer Name: BAE Systems LP (8)	Manufacturer Location: Greenlawn, NY
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: [none specified]:: Installation Name: Mode 5 CXP Systems/Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	297 / 13.470	16 / 0.776	4 / 0.093	- / -	- / -	- / -	1 / 0.010	- / -	- / -	- / -	1 / 0.100	319 / 14.449
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	297 / 13.470	16 / 0.776	4 / 0.093	- / -	- / -	- / -	1 / 0.010	- / -	- / -	- / -	1 / 0.100	319 / 14.449

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	297	4	4	4	4	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	319
Out	297	4	4	4	4	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	319

Method of Implementation: [none specified]:: Installation Name: Mode 5 UPX-24(V) Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	106 / 7.171	3 / 0.603	1 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	110 / 7.874

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 3 / Mark XII Mode 5 (MT037)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Mark XII Mode 5 (MT037)

Installation Information

Method of Implementation: [none specified]:: Installation Name: Mode 5 UPX-24(V) Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	106 / 7.171	3 / 0.603	1 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	110 / 7.874

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	106	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110
Out	106	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110

Method of Implementation: [none specified]:: Installation Name: Mode 5 DI Systems/ Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	265 / 21.932	16 / 0.464	8 / 0.711	- / -	- / -	- / -	2 / 0.206	- / -	- / -	- / -	2 / 0.134	293 / 23.447
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	265 / 21.932	16 / 0.464	8 / 0.711	- / -	- / -	- / -	2 / 0.206	- / -	- / -	- / -	2 / 0.134	293 / 23.447

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 3 / Mark XII Mode 5 (MT037)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Mark XII Mode 5 (MT037)

Installation Information

Method of Implementation: [none specified]:: Installation Name: Mode 5 DI Systems/ Kits

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	265	4	4	4	4	2	2	2	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	293
Out	265	4	4	4	4	2	2	2	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	293

Footnotes:

(5) Procurement of Mode 5 has been prioritized to meet the mandate to field the system prior to FY2020. Hardware unit costs include ancillary equipment throughout the FYDP. The number of kits and necessary ancillary hardware required is dependent upon the class of ship; therefore unit costs fluctuate from year to year based on the number of installs planned for the following year(s). Delta between procurements and installations is due to the (procurement only) Naval Special Warfare units. The Support Equipment (SE) line consists of buying USM-719 (Test Sets) and KIV-78 (crypto appliques). Deliveries occur on a sliding basis, beginning 12 months after contract award and completing 24 months. Install of equipment can not occur until receipt of all 3 pieces of equipment have been delivered from manufacturer. Install costs vary from year to year due to ship availability, ship classification and location of the install. Hardware requirements vary based ship classifications. Inventory Objectives are as follows: Mode 5 Common Digital Transponder (CXP) kits is 427, Mode 5 UPX-24(V) Kits is 110, and Mode 5 Digital Interrogator (DI) Kits is 293. Reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability. Ships undergoing Service Life Extension Program (SLEP) will enter extended availabilities prior to FY20 and will complete after FY20; (CG63-66, 68-69, 71 and LSD 41)

(6) This cost element is impacted by the amount of documentation and logistics work needed because of the differences between ship classes.

(7) Fluctuation in Production Engineering (PE) is due to the reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.

(8) Production lead time ranges from 12 -24 months. Deliveries from the Original Equipment Manufacturer (OEM) commence 12 months after contract award and conclude 24 months after award (i.e. the delivery date on the P-3a is the date of the first delivery, not the date when all items are delivered); installations then occur within the allotted 12 months from when each kit is delivered. Once delivered, additional efforts are required by the In-Service Engineering Activity to produce ready for issue units from kits, and build and test complete systems with ancillary hardware prior to fleet installs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 4 / Mode S Digital Interrogator (MT040)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	37.784	7.104	8.249	7.423	0.000	7.423	9.286	12.035	9.683	8.835	13.024	113.423
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	37.784	7.104	8.249	7.423	0.000	7.423	9.286	12.035	9.683	8.835	13.024	113.423
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**37.784**	**7.104**	**8.249**	**7.423**	**0.000**	**7.423**	**9.286**	**12.035**	**9.683**	**8.835**	**13.024**	**113.423**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Adds Mode Select (S) Beacon System commercial aircraft interrogation capability to shipboard IFF Digital Interrogators (DIs). Incorporation of a Mode S capability in the AN/UPX-41(C) will result in a nomenclature change to AN/UPX-45(C). In some installations, such as Aircraft Carriers, incorporation of the Mode S capability in the DI will include an interface with a ship's Air Traffic Control System. Mode S provides improved aircraft surveillance and communications necessary to support air traffic control automation in the dense traffic environments. Mode S provides more accurate aircraft positional information and minimizes interference by discrete interrogation of each Mode S transponder-equipped aircraft and improved processing of aircraft replies. In addition, Mode S provides the medium for a digital data link, which can be used to exchange information between aircraft and various air traffic control functions and weather databases. Inventory Objective of 321 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table and ship/submarine Ship Program Manager procurement plans and schedules.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 4 / Mode S Digital Interrogator (MT040)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/UPX-37/ ANUPX-41(V)	**Modification Type:** Capability Improvement	**Related RDT&E PEs:** 0604777N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Mode S Digital Interrogator (MT040)												
B Kits												
Non-Recurring												
1.1.1) Equipment - NonOrganic [9]	30 / 0.243	17 / 0.161	42 / 0.470	54 / 0.647	- / -	54 / 0.647	43 / 0.526	42 / 0.524	48 / 0.611	39 / 0.506	6 / 0.079	321 / 3.767
Subtotal: Non-Recurring	*- / 0.243*	*- / 0.161*	*- / 0.470*	*- / 0.647*	*- / -*	*- / 0.647*	*- / 0.526*	*- / 0.524*	*- / 0.611*	*- / 0.506*	*- / 0.079*	*- / 3.767*
Subtotal: Mode S Digital Interrogator (MT040)	*30 / 0.243*	*17 / 0.161*	*42 / 0.470*	*54 / 0.647*	*- / -*	*54 / 0.647*	*43 / 0.526*	*42 / 0.524*	*48 / 0.611*	*39 / 0.506*	*6 / 0.079*	*321 / 3.767*
Subtotal: Procurement, All Modification Items	*- / 0.243*	*- / 0.161*	*- / 0.470*	*- / 0.647*	*- / -*	*- / 0.647*	*- / 0.526*	*- / 0.524*	*- / 0.611*	*- / 0.506*	*- / 0.079*	*- / 3.767*
Support *(All Modification Items)*												
2.1) Support Equipment	- / 0.688	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.688
2.2) ILS	- / 2.935	- / 0.410	- / 0.416	- / 0.422	- / -	- / 0.422	- / 0.428	- / 0.434	- / 0.441	- / 0.447	- / 1.507	- / 7.440
2.3) PE [10]	- / 21.641	- / 3.684	- / 3.709	- / 3.793	- / -	- / 3.793	- / 4.588	- / 4.064	- / 4.190	- / 4.563	- / 6.088	- / 56.320
2.4) Product Improvement [11]	- / 9.007	- / 2.323	- / 2.980	- / 0.757	- / -	- / 0.757	- / 1.442	- / 4.771	- / 2.335	- / 1.394	- / 2.958	- / 27.967
2.5) Acceptance, Test & Evaluation [12]	- / 2.081	- / 0.300	- / 0.252	- / 0.238	- / -	- / 0.238	- / 0.458	- / 0.416	- / 0.502	- / 0.414	- / 0.620	- / 5.281
2.6) Depot	- / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.200
2.7) Initial Training	- / 0.423	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.423
Subtotal: Support	*- / 36.975*	*- / 6.717*	*- / 7.357*	*- / 5.210*	*- / -*	*- / 5.210*	*- / 6.916*	*- / 9.685*	*- / 7.468*	*- / 6.818*	*- / 11.173*	*- / 98.319*
Installation												
Modification Item 1 of 1: Mode S Digital Interrogator (MT040)	- / 0.566	- / 0.226	- / 0.422	- / 1.566	- / 0.000	- / 1.566	- / 1.844	- / 1.826	- / 1.604	- / 1.511	- / 1.772	- / 11.337
Subtotal: Installation	*- / 0.566*	*- / 0.226*	*- / 0.422*	*- / 1.566*	*- / -*	*- / 1.566*	*- / 1.844*	*- / 1.826*	*- / 1.604*	*- / 1.511*	*- / 1.772*	*- / 11.337*
Total												
Total Cost (Procurement + Support + Installation)	**37.784**	**7.104**	**8.249**	**7.423**	**0.000**	**7.423**	**9.286**	**12.035**	**9.683**	**8.835**	**13.024**	**113.423**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 4 / Mode S Digital Interrogator (MT040)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Mode S Digital Interrogator (MT040)

Manufacturer Information

Manufacturer Name: BAE Systems LP	Manufacturer Location: Greenlawn, NY
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024	Dec 2025

Installation Information

Method of Implementation: AIT:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	22 / 0.566	8 / 0.226	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	30 / 0.792
FY 2019	- / -	- / -	17 / 0.422	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	17 / 0.422
FY 2020	- / -	- / -	- / -	42 / 1.566	0 / 0.000	42 / 1.566	- / -	- / -	- / -	- / -	0 / 0.000	42 / 1.566
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	54 / 1.844	- / -	- / -	- / -	0 / 0.000	54 / 1.844
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	43 / 1.826	- / -	- / -	0 / 0.000	43 / 1.826
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 1.604	- / -	0 / 0.000	42 / 1.604
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	48 / 1.511	0 / 0.000	48 / 1.511
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	39 / 1.536	39 / 1.536
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.236	6 / 0.236
Total	22 / 0.566	8 / 0.226	17 / 0.422	42 / 1.566	0 / 0.000	42 / 1.566	54 / 1.844	43 / 1.826	42 / 1.604	48 / 1.511	45 / 1.772	321 / 11.337

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	22	2	2	2	2	4	4	4	5	11	11	10	10	14	14	13	13	11	11	11	10	11	11	10	10	12	12	12	12	45	321
Out	22	2	2	2	2	4	4	4	5	11	11	10	10	14	14	13	13	11	11	11	10	11	11	10	10	12	12	12	12	45	321

Footnotes:

(9) Procurements and installs shifted since FY 2020 President's Budget request due to shift in ship availabilities and to align with PEO IWS and Aegis Modernization schedules.

(10) Production Engineering fluctuates throughout the FYDP as the program transitions from installs on small number of ship classes with limited combat system configurations some years to installs on multiple ship classes with various additional combat system configurations other years.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 4 / Mode S Digital Interrogator (MT040)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(11) Product improvement change across the FYDP due to significant obsolescence issues in the AN/UPX-41/45 equipment. Engineering Change Proposal (ECP) in progress to update the AN/UPX-41 production line to the AN/UPX-45 with redesigned circuit card assemblies in FY21. The new configuration will require spectrum certification, Crypto Certification, and ongoing combat system certification for multiple Aegis and Ship Self Defense System (SSDS) baselines.

(12) Cost is based on ship availabilities and to align with PEO IWS and Aegis Modernization schedules, and aligns with procurements/installs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 5 / OE-120/UPX Antenna (MT041)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	3.274	5.075	5.097	0.000	5.097	7.257	7.407	6.618	10.669	83.857	129.254
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	3.274	5.075	5.097	0.000	5.097	7.257	7.407	6.618	10.669	83.857	129.254
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**3.274**	**5.075**	**5.097**	**0.000**	**5.097**	**7.257**	**7.407**	**6.618**	**10.669**	**83.857**	**129.254**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The OE-120()/UPX antenna radiates Identification Friend or Foe (IFF) encoded radio frequency (RF) challenge pulses into space and receives the resultant IFF encoded RF transponder replies from space. Current surface ship OE-120()/UPX antenna systems will receive upgrade kits to improve system Reliability & Maintainability (R&M). The upgrade kits will use open architecture and current technology that allows for continued production and future growth. An Engineering Change Proposal was awarded using RDT&E (PU 0676) funds for the Original Equipment Manufacturer to deliver an Engineering Design Model for shipboard test and evaluation in fiscal year 2018.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 5 / OE-120/UPX Antenna (MT041)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: OE-120()/UPX Antenna Group	**Modification Type:** Reliability	**Related RDT&E PEs:** 0604777N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: OE-120/UPX Antenna (MT041)												
B Kits												
Non-Recurring												
1.1.1) Equipment - NonOrganic (13)	- / -	1 / 0.360	3 / 1.102	3 / 1.124	- / -	3 / 1.124	4 / 1.528	5 / 1.948	5 / 1.987	5 / 2.027	35 / 15.702	61 / 25.778
Subtotal: Non-Recurring	*- / 0.000*	*- / 0.360*	*- / 1.102*	*- / 1.124*	*- / -*	*- / 1.124*	*- / 1.528*	*- / 1.948*	*- / 1.987*	*- / 2.027*	*- / 15.702*	*- / 25.778*
Subtotal: OE-120/UPX Antenna (MT041)	*- / -*	*1 / 0.360*	*3 / 1.102*	*3 / 1.124*	*- / -*	*3 / 1.124*	*4 / 1.528*	*5 / 1.948*	*5 / 1.987*	*5 / 2.027*	*35 / 15.702*	*61 / 25.778*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 0.360*	*- / 1.102*	*- / 1.124*	*- / -*	*- / 1.124*	*- / 1.528*	*- / 1.948*	*- / 1.987*	*- / 2.027*	*- / 15.702*	*- / 25.778*
Support *(All Modification Items)*												
2.1) ILS	- / -	- / 0.732	- / 0.553	- / 0.564	- / -	- / 0.564	- / 0.384	- / 0.196	- / 0.200	- / 0.204	- / 2.784	- / 5.617
2.2) PE (14)	- / -	- / 1.283	- / 2.249	- / 2.575	- / -	- / 2.575	- / 2.328	- / 2.257	- / 2.937	- / 2.082	- / 28.477	- / 44.188
2.3) Product Improvement (15)	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.395	- / 1.535	- / -	- / 4.071	- / 13.769	- / 20.770
2.4) Acceptance, Test & Evaluation (16)	- / -	- / 0.899	- / 1.171	- / 0.553	- / -	- / 0.553	- / 0.630	- / 0.439	- / 0.439	- / 0.762	- / 7.708	- / 12.601
Subtotal: Support	*- / 0.000*	*- / 2.914*	*- / 3.973*	*- / 3.692*	*- / -*	*- / 3.692*	*- / 4.737*	*- / 4.427*	*- / 3.576*	*- / 7.119*	*- / 52.738*	*- / 83.176*
Installation												
Modification Item 1 of 1: OE-120/UPX Antenna (MT041)	- / 0.000	- / 0.000	- / 0.000	- / 0.281	- / 0.000	- / 0.281	- / 0.992	- / 1.032	- / 1.055	- / 1.523	- / 15.417	- / 20.300
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 0.281*	*- / -*	*- / 0.281*	*- / 0.992*	*- / 1.032*	*- / 1.055*	*- / 1.523*	*- / 15.417*	*- / 20.300*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**3.274**	**5.075**	**5.097**	**0.000**	**5.097**	**7.257**	**7.407**	**6.618**	**10.669**	**83.857**	**129.254**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 5 / OE-120/UPX Antenna (MT041)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: OE-120/UPX Antenna (MT041)

Manufacturer Information

Manufacturer Name: BAE Systems LP (17)	Manufacturer Location: Nashua, NJ
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 23

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Feb 2021	Feb 2022	Feb 2023	Feb 2024	Feb 2025	Feb 2026	Feb 2027

Installation Information

Method of Implementation: [none specified]:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	1 / 0.281	0 / 0.000	1 / 0.281	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.281
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.992	- / -	- / -	- / -	0 / 0.000	3 / 0.992
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.032	- / -	- / -	0 / 0.000	3 / 1.032
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 1.055	- / -	0 / 0.000	4 / 1.055
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.523	0 / 0.000	5 / 1.523
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.713	5 / 1.713
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.739	5 / 1.739
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	35 / 11.965	35 / 11.965
Total	- / -	- / -	- / -	1 / 0.281	0 / 0.000	1 / 0.281	3 / 0.992	3 / 1.032	4 / 1.055	5 / 1.523	45 / 15.417	61 / 20.300

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2	-	-	1	2	-	-	2	2	-	-	3	2	-	45	61
Out	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2	-	-	1	2	-	-	2	2	-	-	3	2	-	45	61

Footnotes:

(13) Unit costs updated to reflect negotiated prices with vendor. FY 2020 President's Budget request reflected initial retrofit kit cost estimates based on vendor proposals from FY15. Retrofit kit unit costs were significantly lower at contract award in FY19.

(14) Increase in FY21 is due to the delivery of the first procured unit from FY 19.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 5 / OE-120/UPX Antenna (MT041)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(15) Product improvement funds planned in FY22 for projected engineering and software changes to the production line.

(16) Acceptance, Test & Evaluation funding is required to start testing various ship baselines before actual installations can occur in the out years.

(17) Updated MFG and contract schedule per contract award.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 6 / AN/UPX-46 Processor System (MT042)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	18.821	14.078	15.691	13.403	26.273	88.266
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	18.821	14.078	15.691	13.403	26.273	88.266
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**18.821**	**14.078**	**15.691**	**13.403**	**26.273**	**88.266**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Replace or upgrade unique Shipboard IFF Interrogator Systems with common hardware configurations including the CP-2819/UPX processor, AN/APX-123(V) Common Digital Transponder (CXP), and Mark XIIA Digital Interrogator (DI) equipment. Unique interrogator systems will not meet Mode 5 requirements per Mark XIIA Cooperative IFF Operational Requirements Document 595-61-02 - dated 27 Apr 2001. Inventory Objective is 68.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 6 / AN/UPX-46 Processor System (MT042)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UPX-29/UPX29A/ UPX-46 Processor System	**Modification Type:** Reliability	**Related RDT&E PEs:** 0604777N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/UPX-46 Processor System (MT042)												
B Kits												
Non-Recurring												
1.1.1) Mode 5 AN/UPX-46 Systems/Kits - NonOrganic (18)	- / -	- / -	- / -	- / -	- / -	- / -	6 / 4.140	8 / 5.603	8 / 6.000	2 / 1.523	4 / 3.050	28 / 20.316
1.1.2) Mode 5 CXP Systems/Kits - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.113	3 / 0.137	3 / 0.176	2 / 0.119	10 / 0.605	20 / 1.150
1.1.3) Mode 5 DI Systems/Kits - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.721	3 / 0.858	3 / 1.121	2 / 0.759	10 / 3.850	20 / 7.309
Subtotal: Non-Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.974*	*- / 6.598*	*- / 7.297*	*- / 2.401*	*- / 7.505*	*- / 28.775*
Subtotal: AN/UPX-46 Processor System (MT042)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*10 / 4.974*	*14 / 6.598*	*14 / 7.297*	*6 / 2.401*	*24 / 7.505*	*68 / 28.775*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.974*	*- / 6.598*	*- / 7.297*	*- / 2.401*	*- / 7.505*	*- / 28.775*
Support *(All Modification Items)*												
2.1) Support Equipment (19)	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.677	- / 2.156	- / 1.425	- / 1.018	- / -	- / 11.276
2.2) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.402	- / 0.418	- / 0.435	- / 0.568	- / 0.853	- / 2.676
2.3) PE (20)	- / -	- / -	- / -	- / -	- / -	- / -	- / 5.174	- / 3.741	- / 4.032	- / 6.330	- / 10.991	- / 30.268
2.4) Product Improvement	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.040	- / 0.781	- / 0.437	- / 0.232	- / -	- / 2.490
2.5) Acceptance Test & Evaluation	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.554	- / 0.384	- / -	- / -	- / -	- / 0.938
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 13.847*	*- / 7.480*	*- / 6.329*	*- / 8.148*	*- / 11.844*	*- / 47.648*
Installation												
Modification Item 1 of 1: AN/UPX-46 Processor System (MT042)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.065	- / 2.854	- / 6.924	- / 11.843
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.065*	*- / 2.854*	*- / 6.924*	*- / 11.843*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**18.821**	**14.078**	**15.691**	**13.403**	**26.273**	**88.266**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 6 / AN/UPX-46 Processor System (MT042)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/UPX-46 Processor System (MT042)

Manufacturer Information

Manufacturer Name: NAWCAD | Manufacturer Location: St. Inigoes, MD

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				Dec 2022	Dec 2023	Dec 2024	Dec 2025
Delivery Dates				Dec 2024	Dec 2025	Dec 2026	Dec 2027

Installation Information

Method of Implementation: AIT:: Installation Name: AN/UPX-46 Processor System

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.065	- / -	0 / 0.000	10 / 2.065
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 2.854	0 / 0.000	14 / 2.854
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 2.896	14 / 2.896
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.963	6 / 0.963
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.065	24 / 3.065
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.065	14 / 2.854	44 / 6.924	68 / 11.843

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	2	-	4	4	4	2	44	68
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	2	-	4	4	4	2	44	68

Footnotes:

(18) Will provide the Mode 5 Capability to (3) Ship Classes. For LCS2 variant ship class the UPX-46 system requires a 24 month lead time, and a UPX-46 kit requires a 12 month lead time. Install of equipment can not occur until receipt of all 3 pieces of equipment have been delivered from manufacturer. Install costs vary from year to year due to ship availability, ship classification and location of the install. Hardware requirements vary based on ship classifications. Initial spares are included in overall hardware cost.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 6 / AN/UPX-46 Processor System (MT042)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(19) FY22 support equipment includes non-recurring cost for the establishment of shore certification lab.

(20) FY22 production engineering supports the production line and the establishment of shore certification lab.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.047	4.081	2.643	11.604	21.375
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.047	4.081	2.643	11.604	21.375
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**3.047**	**4.081**	**2.643**	**11.604**	**21.375**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

AN/UPX-34A Radar Track Discriminator System (RTDS) is installed on CG47 Class Aegis Cruisers and provides high fidelity, long range, Non-Cooperative Target Recognition (NCTR) capability to support the Air-Sea battle by providing timely tactical engagement decisions by Aegis action officers. Upgrades to the system will reduce Rules of Engagement (ROE) concerns, incorporate "other services" target libraries into the RTDS database, and increase the system's range performance. These enhancements are critical to the Aegis Cruiser's primary Anti-Air warfare (AAW) role. These enhancements also provide critical capability to accurately identify and discern civilian versus military aircraft. Inventory objective 11.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Radar Track Discriminator System (RTDS) AN/UPX-34A	**Modification Type:** Reliability	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)												
B Kits												
Non-Recurring												
1.1.1) AN/UPX-34A Kit - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.232	2 / 0.242	1 / 0.126	6 / 1.167	11 / 1.767
Subtotal: Non-Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.232*	*- / 0.242*	*- / 0.126*	*- / 1.167*	*- / 1.767*
Subtotal: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*2 / 0.232*	*2 / 0.242*	*1 / 0.126*	*6 / 1.167*	*11 / 1.767*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.232*	*- / 0.242*	*- / 0.126*	*- / 1.167*	*- / 1.767*
Support *(All Modification Items)*												
2.1) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.206	- / 0.210	- / 0.223	- / 0.730	- / 1.369
2.2) PE	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.637	- / 1.937	- / 1.546	- / 3.992	- / 9.112
2.3) Product Improvement	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.700	- / 0.761	- / -	- / -	- / 1.461
2.4) Acceptance Test and Evaluation	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.198	- / 0.211	- / -	- / -	- / 0.409
2.5) Initial Training	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.074	- / 0.077	- / 0.079	- / 0.154	- / 0.384
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 2.815*	*- / 3.196*	*- / 1.848*	*- / 4.876*	*- / 12.735*
Installation												
Modification Item 1 of 1: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.643	- / 0.669	- / 5.561	- / 6.873
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.643*	*- / 0.669*	*- / 5.561*	*- / 6.873*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**3.047**	**4.081**	**2.643**	**11.604**	**21.375**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/UPX-34A Kit

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.643	- / -	0 / 0.000	2 / 0.643
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.669	0 / 0.000	2 / 0.669
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.340	1 / 0.340
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 5.221	6 / 5.221
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.643	2 / 0.669	7 / 5.561	11 / 6.873

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	7	11
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	7	11

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 8 / AN/UPX-36 Replacement (MT044)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.771	9.063	12.783	15.363	44.980
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.771	9.063	12.783	15.363	44.980
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.771**	**9.063**	**12.783**	**15.363**	**44.980**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Replace or upgrade unique Shipboard IFF Interrogator Systems with UPX-46 common hardware configuration. Unique AN/UPX-36 interrogator systems currently installed on LSD 41 and LSD 49 ship classes will not meet Mode 5 requirements per Mark XIIA Cooperative IFF Operational Requirements Document 595-61-02 - dated 27 Apr 2001. Inventory Objective is 12.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 8 / AN/UPX-36 Replacement (MT044)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/UPX-36	**Modification Type:** Reliability	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/UPX-36 Replacement (MT044)												
B Kits												
Non-Recurring												
1.1.1) AN/UPX-36A Kit - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.724	4 / 5.164	4 / 5.456	1 / 1.364	12 / 15.708
Subtotal: Non-Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 3.724*	*- / 5.164*	*- / 5.456*	*- / 1.364*	*- / 15.708*
Subtotal: AN/UPX-36 Replacement (MT044)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*3 / 3.724*	*4 / 5.164*	*4 / 5.456*	*1 / 1.364*	*12 / 15.708*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 3.724*	*- / 5.164*	*- / 5.456*	*- / 1.364*	*- / 15.708*
Support *(All Modification Items)*												
2.1) Support Equipment	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.600	- / 0.373	- / 0.514	- / 0.772	- / 2.259
2.2) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.564	- / 0.293	- / 0.518	- / 0.778	- / 2.153
2.3) PE	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.710	- / 3.233	- / 3.485	- / 6.704	- / 16.132
2.4) Product Improvement	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.406	- / 1.428	- / 2.834
2.5) Acceptance Test & Evaluation	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.173	- / -	- / -	- / -	- / 0.173
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.047*	*- / 3.899*	*- / 5.923*	*- / 9.682*	*- / 23.551*
Installation												
Modification Item 1 of 1: AN/UPX-36 Replacement (MT044)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.404	- / 4.317	- / 5.721
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.404*	*- / 4.317*	*- / 5.721*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.771**	**9.063**	**12.783**	**15.363**	**44.980**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 8 / AN/UPX-36 Replacement (MT044)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: AN/UPX-36 Replacement (MT044)

Manufacturer Information

Manufacturer Name: NAWCAD 4.11.2.1	Manufacturer Location: St. Inigoes, MD
Administrative Leadtime *(in Months)*: 0	Production Leadtime *(in Months)*: 0

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/UPX-36A Kit

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.404	0 / 0.000	3 / 1.404
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 1.900	4 / 1.900
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 1.928	4 / 1.928
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.489	1 / 0.489
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.404	9 / 4.317	12 / 5.721

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	9	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	9	12

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 9 / DDG 1000 Modernization (MT045)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.100	0.700	0.800	0.400	4.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.100	0.700	0.800	0.400	4.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.100**	**0.700**	**0.800**	**0.400**	**4.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:
Modernization of the DDG 1000 Zumwalt Class IFF Sensor Suite includes product improvement and engineering changes for a three panel electronically scanned array (ESA) antenna, one UPX-42(C) interrogator with Target Data Extractor, and three RT-1912(C)/APX or RT-1912A(C)/APX Transponders.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 9 / DDG 1000 Modernization (MT045)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: DDG 1000 IFF Suite	**Modification Type:** Modernization	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DDG 1000 Modernization (MT045)												
B Kits												
Recurring												
1.1.1) Equipment - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.447	- / -	- / -	- / -	3 / 1.447
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.447*	*- / -*	*- / -*	*- / 0.000*	*- / 1.447*
Subtotal: DDG 1000 Modernization (MT045)	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*3 / 1.447*	*- / -*	*- / -*	*- / -*	*3 / 1.447*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.447*	*- / -*	*- / -*	*- / 0.000*	*- / 1.447*
Support *(All Modification Items)*												
2.1) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.653	- / 0.450	- / 0.675	- / 0.400	- / 2.178
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.653*	*- / 0.450*	*- / 0.675*	*- / 0.400*	*- / 2.178*
Installation												
Modification Item 1 of 1: DDG 1000 Modernization (MT045)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.250	- / 0.125	- / 0.000	- / 0.375
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.250*	*- / 0.125*	*- / 0.000*	*- / 0.375*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.100**	**0.700**	**0.800**	**0.400**	**4.000**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2851 / ID Systems	**Modification Number / Title:** 9 / DDG 1000 Modernization (MT045)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DDG 1000 Modernization (MT045)

Manufacturer Information

Manufacturer Name: NAWC	Manufacturer Location: St. Inigoes, NAS Patuxent River MD
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 16

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates					Mar 2023		
Delivery Dates					Jul 2024		

Installation Information

Method of Implementation: AIT:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.250	1 / 0.125	0 / 0.000	3 / 0.375
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.250	1 / 0.125	0 / 0.000	3 / 0.375

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	3
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	3

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2867 / Joint Precision Approach and Landing System(JPALS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603860N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: 238

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	38.094	85.445	100.751	0.000	100.751	51.640	9.999	4.135	4.232	0.631	294.927
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	38.094	85.445	100.751	0.000	100.751	51.640	9.999	4.135	4.232	0.631	294.927
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**38.094**	**85.445**	**100.751**	**0.000**	**100.751**	**51.640**	**9.999**	**4.135**	**4.232**	**0.631**	**294.927**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	4.633	10.822	12.097	-	12.097	4.771	0.162	0.169	0.174	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Joint Precision Approach and Landing System (JPALS) is the primary precision approach and landing system for CVN and LHA/D ships to support aircraft without SPN-46 Automatic Carrier Landing Systems (ACLS) capability, which include F-35B, F-35C, MQ-25 and future platforms. JPALS ship systems are required to provide CVN and LHA/D ships a primary precision approach capability during night and instrument flight conditions, including coupled approach capability to a hover transition point for LHA/D ships, and coupled approach to the deck (auto-land) capability aboard CVN ships. JPALS also provides over-the-air inertial alignment capability for CVN and LHA/D ships to support aircraft platforms without Link-4A capability, including F-35, MQ-25 and future platforms. JPALS MS B occurred June 2016 and MS C occurred April 2019. Production contract awarded May 2019.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2867 / Joint Precision Approach and Landing System(JPALS)

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0603860N	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 238

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	1 / CR001 AN/USN-3 (V)1 (Modernization)				- / 0.000	- / 38.094	- / 85.445	- / 100.751	- / 0.000	- / 100.751
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 38.094**	**- / 85.445**	**- / 100.751**	**- / 0.000**	**- / 100.751**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-3a	1 / CR001 AN/USN-3 (V)1 (Modernization)				- / 51.640	- / 9.999	- / 4.135	- / 4.232	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 51.640**	**- / 9.999**	**- / 4.135**	**- / 4.232**	**- / 0.631**	**- / 294.927**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
FY 2021 funds the procurement of eight JPALS Systems and other support necessary to field the JPALS ship systems onboard CVN and LHA/D ships that are required to provide the primary precision approach, landing, on-deck inertial alignment, surveillance, and auto-land capability for F-35B/C and all future low observable manned and unmanned platforms.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2867 / Joint Precision Approach and Landing System(JPALS)	**Modification Number / Title:** 1 / CR001 AN/USN-3 (V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	38.094	85.445	100.751	0.000	100.751	51.640	9.999	4.135	4.232	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	38.094	85.445	100.751	0.000	100.751	51.640	9.999	4.135	4.232	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**38.094**	**85.445**	**100.751**	**0.000**	**100.751**	**51.640**	**9.999**	**4.135**	**4.232**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

JPALS ship systems are required to provide CVN and LH ships a primary precision approach capability during night and instrument flight conditions, including coupled approach capability to a hover transition point for LHA/D ships, and coupled approach to the deck (auto-land) capability aboard CVN ships. JPALS also provides over-the-air inertial alignment capability for CVN and LHA/D ships to support aircraft platforms without Link-4A capability, including F-35, MQ-25 and future platforms. Procurements started third quarter FY 2019 after completion of MS C.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2867 / Joint Precision Approach and Landing System(JPALS)	**Modification Number / Title:** 1 / CR001 AN/USN-3 (V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: CVN, L-class ships.	**Modification Type:** Modernization	**Related RDT&E PEs:** 0603860N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CR001 AN/USN-3 (V)1												
B Kits												
Recurring												
1.1.1) AN/USN-3 (V)1 - NonOrganic (1)	- / -	3 / 34.203	7 / 64.979	8 / 63.704	- / -	8 / 63.704	2 / 18.613	- / -	- / -	- / -	- / -	20 / 181.499
1.1.2) ECP/OCIR - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.089	- / 2.245	- / 2.762	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / 34.203*	*- / 64.979*	*- / 63.704*	*- / -*	*- / 63.704*	*- / 18.613*	*- / 2.089*	*- / 2.245*	*- / 2.762*	*Continuing*	*Continuing*
Subtotal: CR001 AN/USN-3 (V)1	*- / -*	*3 / 34.203*	*7 / 64.979*	*8 / 63.704*	*- / -*	*8 / 63.704*	*2 / 18.613*	*- / 2.089*	*- / 2.245*	*- / 2.762*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 34.203*	*- / 64.979*	*- / 63.704*	*- / -*	*- / 63.704*	*- / 18.613*	*- / 2.089*	*- / 2.245*	*- / 2.762*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Integrated Logistics Support (2)	- / -	- / -	- / 3.220	- / 9.008	- / -	- / 9.008	- / 9.310	- / 0.980	- / 0.730	- / 0.550	Continuing	Continuing
2.2) Production Engineering (3)	- / -	- / 3.891	- / 11.863	- / 15.988	- / -	- / 15.988	- / 9.559	- / 3.121	- / 1.160	- / 0.920	Continuing	Continuing
Subtotal: Support	*- / 0.000*	*- / 3.891*	*- / 15.083*	*- / 24.996*	*- / -*	*- / 24.996*	*- / 18.869*	*- / 4.101*	*- / 1.890*	*- / 1.470*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: CR001 AN/USN-3 (V)1	- / 0.000	- / 0.000	- / 5.383	- / 12.051	- / 0.000	- / 12.051	- / 14.158	- / 3.809	- / 0.000	- / 0.000	- / 0.000	- / 35.401
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 5.383*	*- / 12.051*	*- / -*	*- / 12.051*	*- / 14.158*	*- / 3.809*	*- / -*	*- / -*	*- / 0.000*	*- / 35.401*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**38.094**	**85.445**	**100.751**	**0.000**	**100.751**	**51.640**	**9.999**	**4.135**	**4.232**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2867 / Joint Precision Approach and Landing System(JPALS)	**Modification Number / Title:** 1 / CR001 AN/USN-3 (V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CR001 AN/USN-3 (V)1

Manufacturer Information

Manufacturer Name: Raytheon	Manufacturer Location: Fullerton, CA
Administrative Leadtime *(in Months)*: 0	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	May 2019	Dec 2019	Oct 2020	Oct 2021			
Delivery Dates	May 2020	Dec 2020	Oct 2021	Oct 2022			

Installation Information

Method of Implementation: TBD:: Installation Name: FMP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	3 / 5.383	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 5.383
FY 2020	- / -	- / -	- / -	7 / 12.051	0 / 0.000	7 / 12.051	- / -	- / -	- / -	- / -	0 / 0.000	7 / 12.051
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	8 / 14.158	- / -	- / -	- / -	0 / 0.000	8 / 14.158
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.809	- / -	- / -	0 / 0.000	2 / 3.809
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	3 / 5.383	7 / 12.051	0 / 0.000	7 / 12.051	8 / 14.158	2 / 3.809	- / -	- / -	0 / 0.000	20 / 35.401

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	2	1	3	2	1	1	-	2	3	3	-	1	-	1	-	-	-	-	-	-	-	-	-	20
Out	-	-	-	-	-	-	-	2	1	3	2	1	1	-	2	3	3	-	1	-	1	-	-	-	-	-	-	-	-	-	20

Footnotes:

(1) Hardware costs updated to reflect actual contract award values from LRIP contract (Base + 3 Options). Increases are a result of material cost growth and contractor production labor. Variability in 'year to year' pricing is due to the spread of contractor support labor across the contract options.

(2) FY2020 to FY2021 ILS increase is due to the additional Interim Sustainment Contractor support required for the 10 fielded units in FY2021 (vice 3 in FY2020). This additional funding also includes Repair of Repairables (ROR) support for anticipated failures and continued support to delivery of sparing and training packages and production phase ILS planning.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2867 / Joint Precision Approach and Landing System(JPALS)	**Modification Number / Title:** 1 / CR001 AN/USN-3 (V)1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(3) FY2020 to FY2021 increase in Production Engineering is driven by the beginning of engineering change order funding to mitigate production obsolescence issues as well as an increase in pre-installation activities (which includes drawing updates and ship change documents for additional units).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2876 / Naval Mission Planning Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	267.813	11.966	15.296	13.947	0.000	13.947	18.345	31.049	32.813	33.501	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	267.813	11.966	15.296	13.947	0.000	13.947	18.345	31.049	32.813	33.501	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**267.813**	**11.966**	**15.296**	**13.947**	**0.000**	**13.947**	**18.345**	**31.049**	**32.813**	**33.501**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.192	0.086	0.090	-	0.090	0.191	0.142	0.078	0.119	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This line item provides funding to procure Mission Planning workstations and associated Support Equipment, Software/Production Engineering Support, and Integrated Logistics Support (ILS) for the Naval Mission Planning Systems (NavMPS) family of systems, which includes the Joint Mission Planning System-Maritime (JMPS-M) (primary product), Next Generation Naval Mission Planning System (NGNMPS), JMPS-E, Electronic Kneeboard (EKB), Common Munitions Built-in-Test(BIT)/Reprogramming Equipment (CMBRE), and Standardized Tester of Reprogrammable Munitions (STORM) formerly called "Next Generation CMBRE".

JMPS-M (Maritime) is the legacy automated mission planning system for Naval Aviation, currently supporting over 40 Type/Model/Series (T/M/S), U.S. Navy and Marine Corps aircraft and expeditionary forces. Future manned JMPS-M platforms include: CH-53K, CMV-22B and P-8. JMPS-M enables weapon system employment by providing the information and decision aids needed to rapidly plan aircraft, weapon or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal, and post mission analysis. The Navy's modern aircraft need data loaded from JMPS-M to fly their missions.

NGNMPS will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative Multi-Domain Mission Management (MDMM) planning, execution and analysis in support of the National Defense Strategy. NGNMPS will replace Naval Aviation's legacy JMPS no later than 2027 while also affordably leveraging prior investments across the system of systems to deliver integrated and collaborative capability. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans, advanced pre-mission rehearsal/analysis, functionality to load mission data into aircraft and weapons, dynamic replanning/retargeting against evolving threats in contested environments, integrated and advanced post-mission debrief/analysis, cross-domain capabilities, and support for portability of mission planning, mission execution, and mission analysis functions.

JMPS-E (expeditionary) is a scalable, tailorable and collaborative web-based mission planning and execution monitoring tool for Marine Expeditionary Unit and Amphibious Squadron staffs embarked with each Amphibious Ready Group (ARG) and Expeditionary Strike Group (ESG).

EKB provides Naval Aviation with a scalable, rapidly deployable capability to support Department of Defense (DOD) digital transformation initiatives. EKB is configured on a portable electronic device and contains digital flight information, aeronautical products, reference material, and flight planning tools to support aviation operations in land-based, littoral, and blue-water environments. EKB also provides tactical mission planning and execution capabilities including tactical decision aids that support the range of Naval Aviation Enterprise (NAE) operations.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2876 / Naval Mission Planning Systems	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

CMBRE provides USN/USMC forces with the critical capability to perform built-in-test (BIT) and programming/reprogramming of various weapons afloat and ashore. CMBRE operations afloat require the modernization of ammunition Magazine Operations (MAGOPS) in all aircraft carriers (CVN-68 and CVN-78 classes) as well as large-deck L-Class (LHA/LHD) ships to enable safe stores BIT and programming/ reprogramming in CVN magazines to support carrier air wing sortie generation requirements. The Standardized Tester of Reprogrammable Munitions (STORM) (formerly called Next Generation CMBRE) is the follow-on replacement system for the legacy CMBRE System and affordably addresses legacy CMBRE end of life obsolescence issues while also modernizing the system into an affordable lightweight, compact, modular design. CMBRE and STORM further supports USMC expeditionary mission requirements; mandatory cybersecurity protections and resilience; data transfer speeds that are required to support air wing combat readiness and CVN sortie generation requirements, and support for advanced Net-Enabled Weapons across the enterprise that are required in support of the National Defense Strategy to pace the percentage threat. STORM will affordably enhance mission readiness and security, generate improved flexibility, depth and capacity for existing and emerging aviation weapon capabilities during the conduct of ship, shore, and ship-to-shore operations in both conventional and Disaggregated Aviation Operating (DAO) environments.

As aircraft and weapons become increasingly advanced, they will require increased access, quantity, processing analysis and fidelity of data to support mission planning, mission execution, dynamic mission re-planning and mission analysis. These data requirements will require additional advanced processors, memory, storage, and servers. Mission Planning Seats refer to the computer workstations that employ the mission planning software. Program cost is not directly related to FY hardware quantity; software is a cost factor independent of FY hardware quantity and cost. Funding profile accounts for required four-year workstation refresh cycle to preclude aging/obsolete hardware and reduce failure rates, procure supporting emerging technology such as EKB (and STORM starting in FY 2023) to support advanced operational capabilities and address system obsolescence/cyber-security requirements/mission readiness requirements, and support memory requirements for required mission planning capabilities.

NGNMPS and STORM will utilize a Middle Tier Acquisition approach per Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA), as amended in FY 2017 NDAA(codified at 10 U.S.C. sub sec 2302 note) to deliver NGNMPS and STORM capability to the Navy across multiple platforms.

Prior to FY 2017, the EKB was funded in BLI 4268.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	**P-1 Line Item Number / Title:** 2876 / Naval Mission Planning Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Naval Mission Planning Systems	P-5a			- / 267.813	- / 11.966	- / 15.296	- / 13.947	- / 0.000	- / 13.947
P-40	**Total Gross/Weapon System Cost**				**- / 267.813**	**- / 11.966**	**- / 15.296**	**- / 13.947**	**- / 0.000**	**- / 13.947**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2021 provides funding to procure seven hundred fifty (750) Mission Planning Seats, five (5) Expeditionary Planning Seats, EKB, training assets, and other JMPS and NGNMPS support equipment; continues the release of software enhancements based on fleet inputs, emerging technologies, cybersecurity mandates and associated logistics support. FY 2020/2021 laptop procurement supports the AV8B, C-130, C-2A, E-2C/E-2D, MH-60R/S and Navy Legacy Helicopter (NLH) platforms. This hardware is required to field critical electronic attack mission planning capabilities and support cyber security mandates which ensures air superiority and projected military force in contested areas. Updated hardware is required to continue to meet JMPS and NGNMPS operational "Time-To-Plan" requirements for complex platforms, which include F/A-18 (all variants) and EA-18G. Additionally, funding provides for database and server systems with storage space capable of storing National Geospatial-Intelligence Agency (NGA) world-wide map, data imagery, and intelligence data with associated network hardware. This will provide the Fleet with the required storage for map data, Digital Terrain Elevation Data (DTED), imagery, and intelligence required to plan missions. FY 2021 continues modernization of legacy mission planning execution and analysis software and hardware for affordable integration with the NGNMPS.

Items to be funded in this line include:

Workstation Components - Tactical computer hardware is procured through a non-developmental item acquisition strategy. Tactical computer equipment is used to plan and analyze expeditionary missions and aircraft routes under various mission configurations and operational threat environments. Primary outputs are tasking orders, Courses of Actions (COAs), Route Plans, Munitions / Weapons Plans, and Navigation and mission essential data loads for mission execution. New workstations consist of aircraft unique data transfer devices and interfaces, Memory Data Loader Receptacles (MDLR) Small Computer Standard Interface (SCSI) (MDLR-S), EKB, STORM, Ogden Data Device Ethernet Crypto (ODD-EC), Data Storage Unit Receptacle SCSI (DSUR-S), servers, network hubs, printers, fleet training school workstations, JMPS Application Central Access Library (JACAL), training assets, and other peripheral devices for USN/USNR/USMC/USMCR missions. JMPS and NGNMPS Authority to Operate (ATO) requires compliance with Naval Network Warfare Command (NNWC)-issued Information Assurance (IA) mandates and Communications Tasking Orders (CTOs).

Software/Production Engineering Support - The JMPS and NGNMPS programs produce software releases via evolutionary and agile development processes. These releases contain enhancements based on fleet inputs and technology challenges. They also contain changes required to retain compatibility with supported platforms, associated weapons, and threat and imagery databases providing input to JMPS-M and NGNMPS. Software releases are independent of hardware buys. This cost element includes production support services, engineering support services, independent verification and validation test and acceptance, site activation, IA compliance and quality assurance efforts.

Integrated Logistics Support - The JMPS and NGNMPS programs conduct site surveys, prepares site installation drawings and provides on-site engineering and logistics evaluations for installations and delivery systems to ensure compliance with the specified configuration. This includes the production and delivery of technical documentation and training materials such as OPNOTES, installation instructions and user manuals required during the fielding of JMPS-M and NGNMPS products. ILS is a cost factor independent of FY hardware quantity and cost.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems	Item Number / Title [DODIC]: 1 / Naval Mission Planning Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	267.813	11.966	15.296	13.947	0.000	13.947
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	267.813	11.966	15.296	13.947	0.000	13.947
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**267.813**	**11.966**	**15.296**	**13.947**	**0.000**	**13.947**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	0.192	0.086	0.090	-	0.090
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Hardware - Hardware Cost																		
Recurring Cost																		
1.1.1) S7403 MISSION PLANNING SEAT(†) (1)	4,391.95	11,999	52.699	2,699.00	750	2.024	2,780.00	750	2.085	2,780.00	750	2.085	-	-	-	2,780.00	750	2.085
1.1.2) S7408 EXPEDITIONARY WARFARE PLANNING SEAT(†) (2)	3,312.33	365	1.209	2,699.00	5	0.013	2,780.00	5	0.014	2,780.00	5	0.014	-	-	-	2,780.00	5	0.014
1.1.3) S7850 JMPS-M Support Equipment (3)	-	-	23.292	-	-	2.820	-	-	2.774	-	-	2.728	-	-	-	-	-	2.728
1.1.4) S7851 JMPS-E Support Equipment (4)	-	-	0.110	-	-	0.026	-	-	0.026	-	-	0.023	-	-	-	-	-	0.023
1.1.7) S7411 Next Generation Naval Mission Planning System (5)	-	-	-	-	-	-	-	-	3.500	-	-	1.800	-	-	-	-	-	1.800
Subtotal: Recurring Cost	-	-	*77.310*	-	-	*4.883*	-	-	*8.399*	-	-	*6.650*	-	-	-	-	-	*6.650*
Subtotal: Hardware - Hardware Cost	**-**	**-**	***77.310***	**-**	**-**	***4.883***	**-**	**-**	***8.399***	**-**	**-**	***6.650***	**-**	**-**	**-**	**-**	**-**	***6.650***
Support Cost																		
2.1) S7820 Other Costs	-	-	152.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems	Item Number / Title [DODIC]: 1 / Naval Mission Planning Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
2.2) S7830 JMPS Software/Production Engineering Support (6)	-	-	28.438	-	-	5.039	-	-	4.895	-	-	4.962	-	-	-	-	-	4.962
2.3) S7800 JMPS Integrated Logistics Support (7)	-	-	10.050	-	-	2.044	-	-	2.002	-	-	2.035	-	-	-	-	-	2.035
2.4) NGNMPS Software/ Production Engineering Support (8)	-	-	-	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	0.200
2.5) NGNMPS Integrated Logistics Support (9)	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Subtotal: Support Cost	**-**	**-**	***190.503***	**-**	**-**	***7.083***	**-**	**-**	***6.897***	**-**	**-**	***7.297***	**-**	**-**	**-**	**-**	**-**	***7.297***
Gross/Weapon System Cost	**-**	**-**	**267.813**	**-**	**-**	**11.966**	**-**	**-**	**15.296**	**-**	**-**	**13.947**	**-**	**-**	**0.000**	**-**	**-**	**13.947**

(†) indicates the presence of a P-5a

Footnotes:

(1) FY 2021 unit cost and total cost only reflect Mission Planning Seat procurement. Quantities reflect Mission Planning Seat procurement. Quantities reflect Fleet demand and number of Mission Planning Environments/aircraft supported (over 40 T/M/S in FY 2021). Mission Planning Seat quantities are currently based on Fleet demand which is validated by CNAF. FY 2020-2025 unit costs are based on current FY 2018-2019 Mission Planning Seat model (GETAC S410 G2), plus inflation and additional costs due to additional data storage, multiple communication ports for data transfer and peripheral requirements. The Mission Planning Seat candidates are determined by Fleet requirements and COTS/Military spec software/hardware compatibility. The Mission Planning Seats are on a two year procurement cycle.

(2) FY 2021 unit cost and total cost only reflect Expeditionary Warfare Planning Seat procurement. Quantities reflect Expeditionary Warfare Planning Seat procurement. Quantities adjusted to meet Fleet demand. FY 2020-2025 Expeditionary Warfare Planning Seat unit costs are based on current FY 2018-2019 Expeditionary Warfare Planning Seat model (GETAC S410 G2), plus inflation and additional costs due to additional data storage, multiple communication ports for data transfer and peripheral requirements. The Expeditionary Warfare Planning Seat candidates are determined by Fleet requirements and COTS/Military spec software/hardware compatibility. The Expeditionary Warfare Planning Seats are on a two year procurement cycle. Increase in quantity in FY 2023 is for on cycle hardware refresh to prevent obsolescence.

(3) Support Equipment includes storage devices, network hubs, printers, initial fleet training school workstations, Advanced Data Loader Receptacles, Electronic Kneeboards (EKB), Common Munitions Bit Reprogramming Equipment (CMBRE) prior to FY 2021, training assets, and other peripheral devices for USN/USNR/USMC/USMCR missions. Support Equipment adjusted to meet Fleet demand and number of Mission Planning Environments/aircraft supported (over 40 T/M/S in FY 2021).

(4) Increase in FY 2023 for additional support equipment associated with the JMPS-E hardware refresh.

(5) Next Generation Naval Mission Planning System (NGNMPS) is the replacement to JMPS, which is the legacy automated mission planning system for Naval Aviation, supporting over 40 Type/Model/Series (T/M/S), U.S. Navy and Marine Corps aircraft and expeditionary forces. NGNMPS enables weapon system employment by providing the information and decision aids needed to rapidly plan aircraft, weapon or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal and post mission analysis. NGNMPS will affordably address technological obsolescence, deliver collaborative and automated capabilities, and leverage a service-oriented architecture. FY 2021 includes funding to modernize legacy mission planning execution and analysis software to address obsolescence in support of follow on re-use and affordable integration with the NGNMPS.

(6) JMPS Software/Production Engineering Supports over 40 T/M/S, Mission Planning Environments/aircraft, and supports cyber security mandates.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	**P-1 Line Item Number / Title:** 2876 / Naval Mission Planning Systems	**Item Number / Title [DODIC]:** 1 / Naval Mission Planning Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(7) JMPS Integrated Logistics Support provides JMPS technical documentation, training materials and installation instructions that are compliant with cyber security mandates and Communications Tasking Orders (CTOs) for newly deployed platforms.

(8) NGNMPS Software/Production Engineering supports the transition to NGNMPS for over 40 T/M/S, supports micro-services architecture / aircraft, and supports cyber security mandates.

(9) NGNMPS Integrated Logistics Support provides technical documentation, training materials and installation instructions that are compliant with cyber security mandates and Communications Tasking Orders (CTOs) for newly deployed platforms and software.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems	Item Number / Title [DODIC]: 1 / Naval Mission Planning Systems

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) S7403 MISSION PLANNING SEAT		2019 (10)	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Feb 2019	Mar 2019	750	2,699.00	Y		Oct 2017
1.1.1) S7403 MISSION PLANNING SEAT		2020 (11)	TBD / TBD	C / FFP	TBD	Feb 2020	Mar 2020	750	2,780.00	Y		Oct 2019
1.1.1) S7403 MISSION PLANNING SEAT		2021 (12)	TBD / TBD	C / FFP	TBD	Feb 2021	Mar 2021	750	2,780.00	Y		Oct 2019
1.1.2) S7408 EXPEDITIONARY WARFARE PLANNING SEAT		2019 (13)	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Feb 2019	Mar 2019	5	2,699.00	Y		Oct 2017
1.1.2) S7408 EXPEDITIONARY WARFARE PLANNING SEAT		2020 (14)	TBD / TBD	C / FFP	TBD	Feb 2020	Mar 2020	5	2,780.00	Y		Oct 2019
1.1.2) S7408 EXPEDITIONARY WARFARE PLANNING SEAT		2021 (15)	TBD / TBD	C / FFP	TBD	Feb 2021	Mar 2021	5	2,780.00	Y		Oct 2019

Footnotes:

(10) Mission Planning laptops are procured every two years where pricing and fleet requirements are evaluated to ensure they meet fleet requirements while remaining cost effective.

(11) The FY20/21 Mission Planning laptop effort is a competitive FY20 award therefore the performing activity and location are currently TBD to support a competitive contracting strategy. This contract consists of a base year (FY20) and option year (FY21). Once awarded, the performing activity and location will be updated to reflect the selected contractor.

(12) The FY20/21 Mission Planning laptop effort is a competitive FY20 award therefore the performing activity and location are currently TBD to support a competitive contracting strategy. This contract consists of a base year (FY20) and option year (FY21). Once awarded, the performing activity and location will be updated to reflect the selected contractor.

(13) Mission Planning laptops are procured every two years where pricing and fleet requirements are evaluated to ensure they meet fleet requirements while remaining cost effective.

(14) The FY20/21 Mission Planning laptop effort is a competitive FY20 award therefore the performing activity and location are currently TBD to support a competitive contracting strategy. This contract consists of a base year (FY20) and option year (FY21). Once awarded, the performing activity and location will be updated to reflect the selected contractor.

(15) The FY20/21 Mission Planning laptop effort is a competitive FY20 award therefore the performing activity and location are currently TBD to support a competitive contracting strategy. This contract consists of a base year (FY20) and option year (FY21). Once awarded, the performing activity and location will be updated to reflect the selected contractor.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	82.350	0.000	0.000	1.375	0.000	1.375	2.405	2.414	1.699	0.699	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	82.350	0.000	0.000	1.375	0.000	1.375	2.405	2.414	1.699	0.699	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**82.350**	**0.000**	**0.000**	**1.375**	**0.000**	**1.375**	**2.405**	**2.414**	**1.699**	**0.699**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This is a new start.

Maritime Integrated Broadcast Service (MIBS): Program delivers Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard United States Navy surface ships, shore headquarters, and other joint platforms. It disseminates organic and non-organic derived data from Navy platforms to other theater tactical, operational, and strategic users. MIBS provides the Navy a capability to receive, transmit, and deliver near real time IBS data, enhancing the Common Operational Picture (COP) supporting operations in all warfare areas, including Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASW), Undersea Warfare (UW), and Electronic Warfare (EW).

FY21 funds will procure (6) Internet Protocol (IP) switch's allowing non-baseline Aegis Cruiser-Destroyer (CRUDES) platforms to execute Clutch Shot mission. This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is required for National Command and Control capability

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Maritime Integrated Broadcast System	P-5a			- / 0.000	- / -	- / -	- / 1.375	- / -	- / 1.375
P-3a	1 / AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP (Upgrade)				- / 3.839	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / AN/USQ-151, JTT-M SYSTEMS - Ship (New Model)				- / 70.706	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / AN/USQ-151, JTT-M SYSTEM - Shore (New Model)				- / 7.805	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 82.350**	**- / 0.000**	**- / 0.000**	**- / 1.375**	**- / 0.000**	**- / 1.375**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Maritime Integrated Broadcast System	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP (Upgrade)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.839
P-3a	2 / AN/USQ-151, JTT-M SYSTEMS - Ship (New Model)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 70.706
P-3a	3 / AN/USQ-151, JTT-M SYSTEM - Shore (New Model)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.805
P-40	**Total Gross/Weapon System Cost**				**- / 2.405**	**- / 2.414**	**- / 1.699**	**- / 0.699**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Aggregated Items Title:** Maritime Integrated Broadcast System

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) Maritime Integrated Broadcast System (MIBS) - Procurement																				
1.1) Internet Protocol (IP) Switch Procurement (1)(†)	A		-	-	-	-	-	-	-	-	-	196.833	6	1.181	-	-	-	196.833	6	1.181
1.2) System Integration (2)	A		-	-	-	-	-	-	-	-	-	-	-	0.135	-	-	-	-	-	0.135
Subtotal: 1) Maritime Integrated Broadcast System (MIBS) - Procurement			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***1.316***	**-**	**-**	**-**	**-**	**-**	***1.316***
3) Support																				
3.1) Production Support	A		-	-	-	-	-	-	-	-	-	-	-	0.059	-	-	-	-	-	0.059
Subtotal: 3) Support			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***0.059***	**-**	**-**	**-**	**-**	**-**	***0.059***
Total			**-**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.375**	**-**	**-**	**-**	**-**	**-**	**1.375**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) Procurement unit cost consists of system procurement and System Operation and Verification Testing (SOVT). FY21 funding will procure (6) Internet Protocol (IP) switch's allowing non-baseline Aegis Cruiser-Destroyer (CRUDES) platforms to execute Clutch Shot mission which supports Over-The-Horizon-Targeting (OTHT).

(2) Systems Integration consists of terminal integration, configuration drawing updates, training manual updates, and government technical oversight.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Aggregated Items:** Maritime Integrated Broadcast System

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) Maritime Integrated Broadcast System (MIBS) - Procurement												
1.1) Internet Protocol (IP) Switch Procurement (1)		2021	TBD / TBD	C / TBD	San Diego, CA	Oct 2020	Jul 2021	6	196.833	N	Jun 2020	Jun 2020

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 1 / AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3.839	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.839
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3.839	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.839
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3.839**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**3.839**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/USQ-151, JTT-M system is a Ultra High Frequency (UHF) Satellite Communications (SATCOM) radio system that will give the shipboard and ashore users the capability to participate in national and joint theater level tactical intelligence data exchange through the Integrated Broadcast Service (IBS) network using IBS-Simplex (IBS-S) and IBS-Interactive (IBS-I) data. AN/USC-62 upgrade kits update the terminals to support National Security Agency (NSA) mandated crypto modernization, Common Message Format (CMF) and Common Integrated Broadcast (CIB) waveform. The universal computers are being replaced due to obsolescence.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 1 / AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Ship	**Modification Type:** Upgrade	**Related RDT&E PEs:** 0303109N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP												
B Kits												
Recurring												
1.1.1) Universal Computers - NonOrganic	67 / 0.624	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	67 / 0.624
Subtotal: Recurring	*- / 0.624*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.624*
Subtotal: AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP	*67 / 0.624*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*67 / 0.624*
Subtotal: Procurement, All Modification Items	*- / 0.624*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.624*
Installation												
Modification Item 1 of 1: AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP	- / 3.215	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.215
Subtotal: Installation	*- / 3.215*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 3.215*
Total												
Total Cost (Procurement + Support + Installation)	**3.839**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**3.839**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 1 / AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/USC-62 UPGRADE KITS & UNIVERSAL COMPUTER - SHIP

Manufacturer Information

Manufacturer Name: NCS Technologies Inc. | Manufacturer Location: Gainesville, VA

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 3

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: IMO:: Installation Name: Universal Computers

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	67 / 3.215	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	67 / 3.215
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	67 / 3.215	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	67 / 3.215

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67
Out	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 2 / AN/USQ-151, JTT-M SYSTEMS - Ship
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	70.706	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	70.706
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	70.706	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	70.706
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**70.706**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**70.706**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/USQ-151, JTT-M system is a Ultra High Frequency (UHF) Satellite Communications (SATCOM) radio system that will give the shipboard and ashore users the capability to participate in national and joint theater level tactical intelligence data exchange through the Integrated Broadcast Service (IBS) network using IBS-Simplex (IBS-S) and IBS-Interactive (IBS-I) data. New AN/USQ-62, JTT-Senior systems will replace legacy terminals (Tactical Receive Equipment (TRE) and Commanders Tactical Terminal (CTT)) which will become obsolete with the National Security Agency (NSA) crypto modernization mandate as well as be able to provide IBS capability to AEGIS platforms without IBS terminals.

[AN/USQ-151, JTT-M Systems] Maritime Integrated Broadcast System (MIBS) project has been tasked to support accelerated fleet deployment of Joint Tactical Terminal - Maritime (JTT-M) systems and legacy system upgrades to meet pressing operational requirements and to meet critical NSA mandated crypto upgrades, as detailed in NSA SIGINT Director classified memo. The JTT-M systems and upgrades are mandatory to allow/continue broadcast access for DX national priority BMD mission platforms and surface force self-protection capabilities as prioritized by NAVYCYBERFOR prioritization message, DTG: R291339Z MAR 13. Ships failing to get upgrade and planned system installs will lose mission capability after classified deadlines pass. The MIBS Program is working with the type commanders to identify WOO's to accelerate installs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 2 / AN/USQ-151, JTT-M SYSTEMS - Ship
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Ship	**Modification Type:** New Model	**Related RDT&E PEs:** 0303109N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/USQ-151, JTT-M SYSTEMS - Ship												
B Kits												
Recurring												
1.1.1) AN/USQ-151, JTT-M Systems - NonOrganic	74 / 35.953	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	74 / 35.953
1.1.2) Ancillary Equipment - Organic	21 / 1.040	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	21 / 1.040
Subtotal: Recurring	*- / 36.993*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 36.993*
Subtotal: AN/USQ-151, JTT-M SYSTEMS - Ship	*95 / 36.993*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*95 / 36.993*
Subtotal: Procurement, All Modification Items	*- / 36.993*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 36.993*
Support *(All Modification Items)*												
2.1) Production Support	- / 7.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 7.940
2.2) DSA	- / 4.460	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.460
Subtotal: Support	*- / 12.400*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 12.400*
Installation												
Modification Item 1 of 1: AN/USQ-151, JTT-M SYSTEMS - Ship	- / 21.313	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 21.313
Subtotal: Installation	*- / 21.313*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 21.313*
Total												
Total Cost (Procurement + Support + Installation)	**70.706**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**70.706**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 2 / AN/USQ-151, JTT-M SYSTEMS - Ship

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/USQ-151, JTT-M SYSTEMS - Ship

Manufacturer Information

Manufacturer Name: Raytheon | Manufacturer Location: St. Petersburg, FL

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 13

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Ship:: Installation Name: AN/USQ-151, JTT-M Systems

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	74 / 21.313	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	74 / 21.313
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	74 / 21.313	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	74 / 21.313

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74
Out	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74

Method of Implementation (Organic): Ancillary Equipment - Not Installed | **Installation Quantity:** 21

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 3 / AN/USQ-151, JTT-M SYSTEM - Shore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	7.805	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.805
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	7.805	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.805
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**7.805**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.805**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/USQ-151, JTT-M system is a Ultra High Frequency (UHF) Satellite Communications (SATCOM) radio system that will give the shipboard and ashore users the capability to participate in national and joint theater level tactical intelligence data exchange through the Integrated Broadcast Service (IBS) network using IBS-Simplex (IBS-S) and IBS-Interactive (IBS-I) data. New AN/USQ-62, JTT-Senior systems will replace legacy terminals (Tactical Receive Equipment (TRE) and Commanders Tactical Terminal (CTT)) which will become obsolete with the National Security Agency (NSA) crypto modernization mandate as well as be able to provide IBS capability to AEGIS platforms without IBS terminals.

First quarter installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability.

[AN/USQ-151, JTT-M SYSTEM] Maritime Integrated Broadcast System (MIBS) project has been tasked to support accelerated fleet deployment of Joint Tactical Terminal - Maritime (JTT-M) systems and legacy system upgrades to meet pressing operational requirements and to meet critical NSA mandated crypto upgrades, as detailed in NSA SIGINT Director classified memo. The JTT-M systems and upgrades are mandatory to allow/continue broadcast access for DX national priority BMD mission platforms and surface force self-protection capabilities as prioritized by NAVYCYBERFOR prioritization message, DTG: R291339Z MAR 13. Ships failing to get upgrade and planned system installs will lose mission capability after classified deadlines pass. The MIBS Program is working with the type commanders to identify WOO's to accelerate installs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 3 / AN/USQ-151, JTT-M SYSTEM - Shore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore	**Modification Type:** New Model	**Related RDT&E PEs:** 0303109N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: AN/USQ-151, JTT-M SYSTEM - Shore												
B Kits												
Recurring												
1.1.1) AN/USQ-151, JTT-M SYSTEM - NonOrganic	13 / 5.138	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 5.138
Subtotal: Recurring	*- / 5.138*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 5.138*
Subtotal: AN/USQ-151, JTT-M SYSTEM - Shore	*13 / 5.138*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*13 / 5.138*
Subtotal: Procurement, All Modification Items	*- / 5.138*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 5.138*
Installation												
Modification Item 1 of 1: AN/USQ-151, JTT-M SYSTEM - Shore	*- / 2.667*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 0.000*	*- / 2.667*
Subtotal: Installation	*- / 2.667*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.667*
Total												
Total Cost (Procurement + Support + Installation)	**7.805**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.805**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2900 / Maritime Integrated Broadcast System	**Modification Number / Title:** 3 / AN/USQ-151, JTT-M SYSTEM - Shore

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: AN/USQ-151, JTT-M SYSTEM - Shore

Manufacturer Information

Manufacturer Name: Raytheon | Manufacturer Location: St. Petersburg, FL

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 13

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/USQ-151, JTT-M SYSTEM

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	13 / 2.667	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 2.667
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	13 / 2.667	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 2.667

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Out	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	145.962	42.666	33.419	22.771	0.000	22.771	19.433	21.805	24.774	31.477	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	145.962	42.666	33.419	22.771	0.000	22.771	19.433	21.805	24.774	31.477	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**145.962**	**42.666**	**33.419**	**22.771**	**0.000**	**22.771**	**19.433**	**21.805**	**24.774**	**31.477**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.625	0.652	1.081	-	1.081	0.888	0.779	1.200	1.275	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Tactical/Mobile (TacMobile) C4I Systems: The Tactical Mobile program provides evolutionary systems and equipment upgrades to support the Maritime Patrol and Reconnaissance Force Commanders with the capability to plan, direct and control the tactical operations of Maritime Patrol and Reconnaissance Aircraft (MPRA) and other assigned units within their respective area of responsibility. Looking ahead, TacMobile provides critical reach-back capabilities between the Maritime Patrol and Reconnaissance Aircraft, primarily the P-8A/Poseidon, and MQ-4C/Triton, and the Maritime Intelligence Surveillance and Reconnaissance Enterprise. These operations include littoral, open ocean, and over land long-dwell surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, anti-submarine warfare, mining, search and rescue, indications and warnings, and special operations. The missions are supported by the fixed-site Tactical Operations Centers (TOCs) and Mobile Tactical Operations Centers (MTOCs). Each TacMobile unit is a system-of-systems. TOCs provide sensor and tactical data communications systems; mission planning/mission support, sensor analysis capabilities; avionics and weapons system interfaces, media devices and data handling capabilities, at fixed-site locations. MTOC is a scalable, mobile version of the TOC for contingency operations and for support of MPRA operations from remote forward operating base airfields.

7 TOCs: 6 operational systems (located at Jacksonville Florida, Sigonella Italy, Kaneohe Bay Hawaii, Whidbey Island Washington, Kadena Japan, and Bahrain), and 1 laboratory system (the "TacMobile Systems Integration Lab" (TMSIL), collocated at NIWC Atlantic detachment Patuxent River Maryland with PMA-290's P-8A "Pax River Systems Integration Lab" (PAXSIL)).

15 MTOCs: 10 operational systems (5 systems home ported at Naval Air Station (NAS) Jacksonville Florida and 5 systems at NAS Whidbey Island Washington), 1 laboratory system (an aircraft integration lab located at Navy Detachment Dallas), 1 C4I engineering and maintenance support system (located at the In Service Engineering Activity (ISEA), NWIC Atlantic), 1 C4I mobile systems schoolhouse (located at the Center for Naval Air Technical Training (CNATT) Jacksonville Florida), and 2 systems undergoing production/integration with C4I equipment procured in FY19, and standalone Mobility/Facilities equipment procured in FY20, to meet current operational configuration/requirements.

The TacMobile program uses an evolutionary development strategy consisting of incremental upgrades to meet new and emergent Fleet requirements, while retaining current capabilities. Increments are planned and resourced to support the MPRF Family of Systems aircraft: P-8A Poseidon aircraft and its upgrades; Advanced Airborne Sensor (AAS); and MQ-4C Triton.

T4050 will fund TacMobile Command, Control, Computer, Communications and Intelligence (C4I), network, and reach back communications systems modernization. Additionally, the line item funds TacMobile interfaces with P-8A (including Advanced Airborne Sensor (AAS)) and MQ-4C aircraft systems and sensors, and tactical communications modernization. Together these separate capabilities are combined to provide the TOCs and MTOCs with an Integrated Warfighting Capability to support Maritime Patrol P-8A operation requirements and pace aircraft modernization requirements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604231N
Line Item MDAP/MAIS Code: N/A		

TacMobile C4I/P-8A modernization are synchronized to provide Technical Refreshes and Incremental Capability upgrades which provide the underlying C4I Infrastructure components and aircraft support capabilities components that ride on the C4I infrastructure. There are five major TacMobile components comprised of currently twenty three distinct subsystems that are developed in synchronization to work together, and are therefore fielded together. New or modernized aircraft interfaces are built specifically to integrate onto the new or modernized C4I infrastructure. They operate together as an overarching system of systems.

Deployable Joint Command and Control (DJC2)(JH500): DJC2 provides a self-contained, standardized, rapidly deployable, modular, scalable, and reconfigurable joint command and control (C2) capability to designated Geographic Combatant Commands (GCCs). DJC2 is the materiel solution to Defense Planning Guidance that called for the development of standing Joint Task Forces (JTF) with a deployable C2 capability. DJC2 will ensure that Joint Force Commanders (JFC) are equipped, as well as trained and organized to carry out their C2 responsibilities. DJC2 provides GCCs and JFCs a mission critical, integrated family of systems with which to plan, control, coordinate, execute and assess operations. It is designed to deploy rapidly, set up within hours and quickly provide necessary C2 mission and collaboration functionality across the full spectrum of JTF operations. DJC2 has also been deployed in support of Humanitarian Assistance and Disaster Relief (HA/DR) efforts. The capability is intended for all levels of conflict and will be reconfigurable to meet specific GCC and JTF mission requirements. This capability is interoperable with higher and adjacent echelons of command (to include coalition allies), as well as supporting elements to include joint forces.

DJC2 sites are as follows: six (6) DJC2 core systems garrisoned in Tampa, Florida (1); Brunswick, Georgia (1); Stuttgart, Germany (1); United States Pacific Command (USPACOM), Okinawa, Japan (1) and Pearl Harbor, Hawaii (1); and Navy Europe (NAVEUR), Sigonella, Italy (1).

[P40A / Increment 3 FRP]: Increment capability upgrades include Command and Control, systems and Aircraft Interfaces necessary to support Maritime Patrol Hub and Spoke Expeditionary Capability. Provides Multiple Domain access, and Cross Domain solutions (UNCLASS / SECRET / TS SCI and SAP, to support Maritime Patrol Familly of Systems aircraft operations. P-8A Inc 3 Services Oriented Architecture, Net Enabled Weapons, Anti Submarine Warfare Quick Reaction Capability, as well as other Maritime Patrol Familly of Systems Aircraft Systems.

[P40A / Minotaur / Maven]: Funding procures / Installs Minotaur/Maven capabilities at TOC and MTOC to enhance Processing/Exploitation/Dissemination (PED) automation of P-8A Intelligence/Surveillance/ Reconnaissance (ISR) data, improves data persistence, and identification (ID) generation for automated and reduced processing times. Provides enhanced PED and Battlespace Awareness across ISR and non-traditional ISR platforms. Provides post-flight Machine Learning/Artificial Intelligence (ML/AI) to enable post-mission processing of Full Motion Video (FMV) and Acoustic Intelligence (ACINT) for P-8 missions to improve automation and speed of PED operations. Installs Maritime FMV and ACINT algorithms via Maven appliances to classify mission relevant activity data for automatic post mission reporting products. Supports automation of Post-Mission PED within TOC/MTOC in support of Maritime Operations.

[P40A / Shore Pre-Installation and Design]: Increment capability upgrades include Command and Control, systems and Aircraft Interfaces necessary to support Maritime Patrol Hub and Spoke Expeditionary Capability. Provides Multiple Domain access, and Cross Domain solutions (UNCLASS / SECRET / TS SCI and SAP, to support Maritime Patrol Familly of Systems aircraft operations. P-8A Inc 3 Services Oriented Architecture, Net Enabled Weapons, Anti Submarine Warfare Quick Reaction Capability, as well as other Maritime Patrol Familly of Systems Aircraft Systems.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Tactical/Mobile (TacMobile) C4I Systems	P-5a, P-21			- / 83.186	- / 18.066	- / 7.153	- / 2.602	- / -	- / 2.602
P-3a	1 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1 (Upgrade)				- / 62.776	- / 11.910	- / 13.075	- / 1.500	- / 0.000	- / 1.500
P-3a	2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2 (Tech Refresh 2.1.2)				- / 0.000	- / 12.690	- / 13.191	- / 18.669	- / 0.000	- / 18.669
P-40	**Total Gross/Weapon System Cost**				**- / 145.962**	**- / 42.666**	**- / 33.419**	**- / 22.771**	**- / 0.000**	**- / 22.771**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Tactical/Mobile (TacMobile) C4I Systems	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1 (Upgrade)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 89.261
P-3a	2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2 (Tech Refresh 2.1.2)				- / 17.341	- / 19.661	- / 6.748	- / 8.305	- / 25.200	- / 121.805
P-40	**Total Gross/Weapon System Cost**				**- / 19.433**	**- / 21.805**	**- / 24.774**	**- / 31.477**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Overall budget request reduction is due to a decrease in the TacMobile MTOC C4I system procurement, unit cost decrease for DJC2 system enhancements, and the completion of TacMobile Tech Refresh 2.1.1 system procurement.

FY21 request funds the installation of TacMobile TOC and MTOC Technical Refresh and Total Inventory Objective (TIO) MTOC items procured in FY20.

FY21 funding procures Technical Refresh of TacMobile TOC and MTOC C4I and P-8A aircraft interfaces. Specifically TR 2.1.2 procures Technical Refresh of the TacMobile P-8A Aircraft Interface Subsystem (AIS) and the associated P-8A AIS Fly-Away Kit (FAK) to maintain interoperability with the P-8A aircraft. FY21 funding also procures critical Cyber upgrades for the TOC and MTOC C4I Networks, Workstations, and Data Storage environment, to address cybersecurity and extend service life of fielded systems.

FY21 funding supports DJC2 system communication modernization efforts for six (6) sites. DJC2 will maintain interoperability with Joint Force Commanders, address cyber vulnerabilities, and extend service life of fielded systems. Additionally, funds support delivering Next Generation Enclave (NGE) compute and storage resources, Global Broadcast System (GBS) communication, Environmental Control Units (ECUs), and AC2 capability for operations in denied and degraded environments.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Aggregated Items Title:** Tactical/Mobile (TacMobile) C4I Systems

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) T4050 Tactical/Mobile																				
1.1) Minotaur / Maven ISR (1)(†)	A		-	-	-	210.500	12	2.526	-	-	-	-	-	-	-	-	-	-	-	-
1.2) TIO MTOC System(†)	A		-	-	-	5,500.000	2	11.000	1,750.000	2	3.500	-	-	-	-	-	-	-	-	-
1.3) Tech Refresh (2)	A		660.545	22	14.532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) OCO MTOC System	A		7,603.000	1	7.603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) Consolidated Prior Year Requirements	A		807.328	67	54.091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) T4050 Tactical/Mobile			**-**	**-**	***76.226***	**-**	**-**	***13.526***	**-**	**-**	***3.500***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) JH500 DJC2 Increment I System Enhancements																				
2.1) DJC2 Increment I System Enhancements (3)(†)	A		362.333	12	4.348	444.333	6	2.666	508.833	6	3.053	379.667	6	2.278	-	-	-	379.667	6	2.278
Subtotal: 2) JH500 DJC2 Increment I System Enhancements			**-**	**-**	***4.348***	**-**	**-**	***2.666***	**-**	**-**	***3.053***	**-**	**-**	***2.278***	**-**	**-**	**-**	**-**	**-**	***2.278***
3) T4776 Installation																				
3.1) Minotaur / Maven(†)	A		-	-	-	131.167	12	1.574	-	-	-	-	-	-	-	-	-	-	-	-
3.2) TIO MTOC System	A		-	-	-	-	-	-	-	-	0.600	-	-	0.324	-	-	-	-	-	0.324
3.3) Tech Refresh	A		-	-	2.006	-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-
3.4) OCO MTOC System	A		-	-	0.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) T4776 Installation			**-**	**-**	***2.303***	**-**	**-**	***1.874***	**-**	**-**	***0.600***	**-**	**-**	***0.324***	**-**	**-**	**-**	**-**	**-**	***0.324***
4) Support																				
4.1) Shore Pre-Installation and Design	A		-	-	0.309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) Support			**-**	**-**	***0.309***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**83.186**	**-**	**-**	**18.066**	**-**	**-**	**7.153**	**-**	**-**	**2.602**	**-**	**-**	**-**	**-**	**-**	**2.602**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) FY19 OCO funding recieved July '19 / Placed on Contract Sep '19, 7 month procurement lead time, will be installed 3Q/4Q FY20.

(2) Provided overarching technical modernization and technical refresh to fielded TacMobile systems.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Aggregated Items Title:** Tactical/Mobile (TacMobile) C4I Systems

(3) Quantities listed represent six (6) Deployable Joint Command and Control (DJC2) core system garrisoned in Tampa, Florida (1); Brunswick, Georgia (1); Stuttgart, Germany (1); USPACOM, Okinawa, Japan (1) and Pearl Harbor, Hawaii (1); and NAVEUR, Sigonella, Italy (1). Unit costs vary due to the number or level of core system modernization efforts performed at each site from year to year. Unit cost decrease from FY20 to FY21 is due to additional funding in FY20 for procurement of Assured Command and Control (AC2) modems. FY21 funding focuses on delivering Next Generation Enclave (NGE) compute and storage resources, Global Broadcast System (GBS) communication, Environmental Control Units (ECUs), and AC2 capability for operations in denied and degraded environments. Additionally, DJC2 will maintain interoperability with Joint Force Commanders, address cyber vulnerabilities, and extend service life of fielded systems. These improvements reduce size, weight, power requirements, and improves DJC2 cyber posture.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems	Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) T4050 Tactical/Mobile												
1.1) Minotaur / Maven ISR (1)(†)	✓	2019	NAWC AD 5.4 / Various	C / CPFF	Various	Sep 2019	Apr 2020	12	210.500	Y		Jul 2019
1.2) TIO MTOC System		2019	NIWC LANT / Charleston, SC	C / CPFF	Charleston, SC	Nov 2018	Aug 2019	2	5,500.000	Y		Jul 2018
1.2) TIO MTOC System		2020	NIWC LANT / Charleston, SC	C / CPFF	Charleston, SC	Nov 2019	Aug 2020	2	1,750.000	Y		Jul 2019
2) JH500 DJC2 Increment I System Enhancements												
2.1) DJC2 Increment I System Enhancements (3)(†)		2019	NAVWAR / San Diego	WR	San Deigo, CA	Apr 2019	Jun 2019	6	444.333	Y		
2.1) DJC2 Increment I System Enhancements (3)(†)		2020	NAVWAR / San Diego	WR	San Deigo, CA	Apr 2020	Jun 2020	6	508.833	Y		
2.1) DJC2 Increment I System Enhancements (3)(†)		2021	NAVWAR / San Diego	WR	San Deigo, CA	Apr 2021	Jun 2021	6	379.667	Y		
3) T4776 Installation												
3.1) Minotaur / Maven(†)	✓	2019	NAWC AD 5.4 / Various	C / CPFF	Various	Sep 2019	Apr 2020	12	131.167	Y		Jul 2019

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10

P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems

Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems

Items (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) T4050 Tactical/Mobile																															
1.1) Minotaur / Maven ISR (1)																															
✓	6	2019	NAVY	12	0	12												A -	-	-	-	-	-	-	12						0
2) JH500 DJC2 Increment I System Enhancements																															
2.1) DJC2 Increment I System Enhancements (3)																															
Prior Years Deliveries: 12																															
	7	2019	NAVY	6	0	6							A -	-	1	1	1	1	1	1											0
	7	2020	NAVY	6	0	6																			A -	-	1	1	1	1	2
	7	2021	NAVY	6	0	6																									6
3) T4776 Installation																															
3.1) Minotaur / Maven																															
✓	8	2019	NAVY	12	0	12												A -	-	-	-	-	-	-	12						0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10

P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems

Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems

Items (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) T4050 Tactical/Mobile																															
1.1) Minotaur / Maven ISR (1)																															
✓	6	2019	NAVY	12	12	0																									0
2) JH500 DJC2 Increment I System Enhancements																															
2.1) DJC2 Increment I System Enhancements (3)																															
Prior Years Deliveries: 12																															
	7	2019	NAVY	6	6	0																									0
	7	2020	NAVY	6	4	2	1	1																							0
	7	2021	NAVY	6	0	6							A -	-	1	1	1	1	1	1											0
3) T4776 Installation																															
3.1) Minotaur / Maven																															
✓	8	2019	NAVY	12	12	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Aggregated Items:** Tactical/Mobile (TacMobile) C4I Systems

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	NAWC AD 5.4 - Various			TBD	0	11	7	18	0	0	0	0
2	NAVWAR - San Diego	1	3	6	0	6	2	8	0	6	2	8
3	NAWC AD 5.4 - Various			TBD	0	11	7	18	0	0	0	0

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 1 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	62.776	11.910	13.075	1.500	0.000	1.500	0.000	0.000	0.000	0.000	0.000	89.261
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	62.776	11.910	13.075	1.500	0.000	1.500	0.000	0.000	0.000	0.000	0.000	89.261
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**62.776**	**11.910**	**13.075**	**1.500**	**0.000**	**1.500**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**89.261**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides technical modernization and technical refresh to fielded TacMobile Command and Control, Networking, and Communications systems necessary to support P-8A Poseidon Increment 2 and MQ-4C Triton Unmanned Aerial System (UAS) at their initial Operating Capability (IOC)

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 1 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Inc 2.1	**Modification Type:** Upgrade	**Related RDT&E PEs:** 0604231N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1												
B Kits												
Recurring												
1.1.1) TOC - NonOrganic (4)	28 / 20.035	6 / 4.604	7 / 4.597	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	41 / 29.236
1.1.2) MTOC - NonOrganic (5)	44 / 38.654	4 / 4.496	8 / 7.378	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	56 / 50.528
Subtotal: Recurring	*- / 58.689*	*- / 9.100*	*- / 11.975*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 79.764*
Subtotal: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1	*72 / 58.689*	*10 / 9.100*	*15 / 11.975*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*97 / 79.764*
Subtotal: Procurement, All Modification Items	*- / 58.689*	*- / 9.100*	*- / 11.975*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 79.764*
Support *(All Modification Items)*												
2.1) Shore Pre-Installation Design	- / 1.121	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.121
Subtotal: Support	*- / 1.121*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.121*
Installation												
Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1	- / 2.966	- / 2.810	- / 1.100	- / 1.500	- / 0.000	- / 1.500	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.376
Subtotal: Installation	*- / 2.966*	*- / 2.810*	*- / 1.100*	*- / 1.500*	*- / -*	*- / 1.500*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 8.376*
Total												
Total Cost (Procurement + Support + Installation)	**62.776**	**11.910**	**13.075**	**1.500**	**0.000**	**1.500**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**89.261**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 1 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1

Manufacturer Information

Manufacturer Name: NIWC LANT | Manufacturer Location: Charleston, SC

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020					
Delivery Dates	Aug 2019	Aug 2020					

Installation Information

Method of Implementation: [none specified]:: Installation Name: TacMobile C4I Systems Technical Refresh 2.1.1

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	50 / 2.966	22 / 2.810	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	72 / 5.776
FY 2019	- / -	- / -	10 / 1.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 1.100
FY 2020	- / -	- / -	- / -	15 / 1.500	0 / 0.000	15 / 1.500	- / -	- / -	- / -	- / -	0 / 0.000	15 / 1.500
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	50 / 2.966	22 / 2.810	10 / 1.100	15 / 1.500	0 / 0.000	15 / 1.500	- / -	- / -	- / -	- / -	0 / 0.000	97 / 8.376

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	50	-	7	7	8	-	5	5	-	2	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97
Out	50	-	7	7	8	-	5	5	-	2	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97

Footnotes:

(4) For Tactical Operations Center: 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Facility component system upgrades of TacMobile systems. 2. TacMobile Tech Refresh 2.1.1 consists of refreshing 5 major components (made up of 14 individual subsystems) that range in cost from $500K (MIDS JTRS radios) to $1,350K(Higher Than SECRET (HTS) Enclave C2I components). The tech refresh hardware composition is dependent upon the requirements of the site at the time of refresh. In FY19 the primary components procured were HF Radios for the

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 1 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Communications Component and Higher Than SECRET (HTS) Enclave C21 components. FY20 will procure MIDS JTRS radios, Link Monitoring Management Tool, and Tactical Mobile Acoustic Support System (TacMASS) subcomponent refresh. HTS Enclave procurement in FY19 results in significantly higher Average Unit Cost, than the less expensive components being procured in FY20.

(5) For Tactical Operations Center: 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Facility component system upgrades of TacMobile systems. 2. TacMobile Tech Refresh 2.1.1 consists of refreshing 5 major components (made up of 14 individual subsystems) that range in cost from $500K (MIDS JTRS radios) to $1,350K(Higher Than SECRET (HTS) Enclave C2I components). The tech refresh hardware composition is dependent upon the requirements of the site at the time of refresh. In FY19 the primary components procured were HF Radios for the Communications Component and Higher Than SECRET (HTS) Enclave C21 components. FY20 will procure MIDS JTRS radios, Link Monitoring Management Tool, and Tactical Mobile Acoustic Support System (TacMASS) subcomponent refresh. HTS Enclave procurement in FY19 results in significantly higher Average Unit Cost, than the less expensive components being procured in FY20.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	12.690	13.191	18.669	0.000	18.669	17.341	19.661	6.748	8.305	25.200	121.805
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	12.690	13.191	18.669	0.000	18.669	17.341	19.661	6.748	8.305	25.200	121.805
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**12.690**	**13.191**	**18.669**	**0.000**	**18.669**	**17.341**	**19.661**	**6.748**	**8.305**	**25.200**	**121.805**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Technical Refresh of Command and Control, Networking and Communications systems necessary to maintain support Maritime Patrol Family of Systems aircraft operations. Includes: Network modernization to maintain Cyber Security posture; Communications refresh and modernization; Sensor analysis, mission planning, and in-flight mission support capabilities, avionics and weapons system interfaces modernization necessary to support P-8A Operations

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Various	**Modification Type:** Tech Refresh 2.1.2	**Related RDT&E PEs:** 0604231N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2												
B Kits												
Recurring												
1.1.1) TOC - NonOrganic [6]	- / -	2 / 4.382	1 / 2.952	3 / 8.784	- / -	3 / 8.784	2 / 6.416	3 / 9.230	1 / 3.074	2 / 4.052	1 / 3.000	15 / 41.890
1.1.2) MTOC - NonOrganic [7]	- / -	3 / 7.999	3 / 8.839	3 / 8.785	- / -	3 / 8.785	3 / 9.625	3 / 9.231	1 / 3.074	2 / 4.053	7 / 21.000	25 / 72.606
Subtotal: Recurring	*- / 0.000*	*- / 12.381*	*- / 11.791*	*- / 17.569*	*- / -*	*- / 17.569*	*- / 16.041*	*- / 18.461*	*- / 6.148*	*- / 8.105*	*- / 24.000*	*- / 114.496*
Subtotal: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2	*- / -*	*5 / 12.381*	*4 / 11.791*	*6 / 17.569*	*- / -*	*6 / 17.569*	*5 / 16.041*	*6 / 18.461*	*2 / 6.148*	*4 / 8.105*	*8 / 24.000*	*40 / 114.496*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / 12.381*	*- / 11.791*	*- / 17.569*	*- / -*	*- / 17.569*	*- / 16.041*	*- / 18.461*	*- / 6.148*	*- / 8.105*	*- / 24.000*	*- / 114.496*
Support *(All Modification Items)*												
2.1) Shore Pre-Installation Design [8]	- / -	- / 0.309	- / 0.700	- / 0.700	- / -	- / 0.700	- / 0.700	- / 0.700	- / -	- / -	- / -	- / 3.109
Subtotal: Support	*- / 0.000*	*- / 0.309*	*- / 0.700*	*- / 0.700*	*- / -*	*- / 0.700*	*- / 0.700*	*- / 0.700*	*- / -*	*- / -*	*- / 0.000*	*- / 3.109*
Installation												
Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2	- / 0.000	- / 0.000	- / 0.700	- / 0.400	- / 0.000	- / 0.400	- / 0.600	- / 0.500	- / 0.600	- / 0.200	- / 1.200	- / 4.200
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 0.700*	*- / 0.400*	*- / -*	*- / 0.400*	*- / 0.600*	*- / 0.500*	*- / 0.600*	*- / 0.200*	*- / 1.200*	*- / 4.200*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**12.690**	**13.191**	**18.669**	**0.000**	**18.669**	**17.341**	**19.661**	**6.748**	**8.305**	**25.200**	**121.805**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2

Manufacturer Information

Manufacturer Name: NIWC LANT | Manufacturer Location: Charleston, SC

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025
Delivery Dates	Aug 2019	Aug 2020	Aug 2021	Aug 2022	Aug 2023	Aug 2024	Aug 2025

Installation Information

Method of Implementation: [none specified]:: Installation Name: TacMobile C4I Systems Technical Refresh 2.1.2

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	5 / 0.700	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.700
FY 2020	- / -	- / -	- / -	4 / 0.400	0 / 0.000	4 / 0.400	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.400
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.600	- / -	- / -	- / -	0 / 0.000	6 / 0.600
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	- / -	0 / 0.000	5 / 0.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.600	- / -	0 / 0.000	6 / 0.600
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.200	0 / 0.000	2 / 0.200
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.400	4 / 0.400
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.800	8 / 0.800
Total	- / -	- / -	5 / 0.700	4 / 0.400	0 / 0.000	4 / 0.400	6 / 0.600	5 / 0.500	6 / 0.600	2 / 0.200	12 / 1.200	40 / 4.200

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	2	2	1	-	2	1	1	-	2	2	2	-	1	2	2	-	2	2	2	-	1	-	1	12	40
Out	-	-	-	-	-	-	2	2	1	-	1	2	1	-	2	2	2	-	1	2	2	-	2	2	2	-	1	-	1	12	40

Footnotes:

(6) For Tactical Operations Center: In FY21, TacMobile Tech Refresh 2.1.2 continues procurement of network architecture upgrades and Network Attached Storage (NAS) to meet increasing requirement for management and dissemination of data from additional P-8A Intelligence Surveillance Reconnaissance and Anti-Submarine Warfare mission sensors. FY21 implements increased Security and Technical Implementation Guideline (STIG) cyber related mandates during the production of these TacMobile systems. For Mobile Tactical Operations Center: In FY21, TacMobile Tech Refresh 2.1.2 continues

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2906 / Tactical/Mobile C4I Systems	**Modification Number / Title:** 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

procurement of network architecture upgrades and Network Attached Storage (NAS) to meet increasing requirement for management and dissemination of data from additional P-8A Intelligence Surveillance Reconnaissance and Anti-Submarine Warfare mission sensors. FY21 implements increased Security and Technical Implementation Guideline (STIG) cyber related mandates during the production of these TacMobile systems.

(7) For Tactical Operations Center: In FY21, TacMobile Tech Refresh 2.1.2 continues procurement of network architecture upgrades and Network Attached Storage (NAS) to meet increasing requirement for management and dissemination of data from additional P-8A Intelligence Surveillance Reconnaissance and Anti-Submarine Warfare mission sensors. FY21 implements increased Security and Technical Implementation Guideline (STIG) cyber related mandates during the production of these TacMobile systems. For Mobile Tactical Operations Center: In FY21, TacMobile Tech Refresh 2.1.2 continues procurement of network architecture upgrades and Network Attached Storage (NAS) to meet increasing requirement for management and dissemination of data from additional P-8A Intelligence Surveillance Reconnaissance and Anti-Submarine Warfare mission sensors. FY21 implements increased Security and Technical Implementation Guideline (STIG) cyber related mandates during the production of these TacMobile systems.

(8) Unit and installation costs vary based upon the specific subsystems technically refreshed from year to year.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305208N, 0304785N

Line Item MDAP/MAIS Code: 000

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	275.138	10.219	18.677	18.872	0.000	18.872	17.457	17.720	18.118	18.483	209.073	603.757
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	275.138	10.219	18.677	18.872	0.000	18.872	17.457	17.720	18.118	18.483	209.073	603.757
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**275.138**	**10.219**	**18.677**	**18.872**	**0.000**	**18.872**	**17.457**	**17.720**	**18.118**	**18.483**	**209.073**	**603.757**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.157	0.554	0.981	-	0.981	1.464	0.525	0.396	-	-	4.077
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Distributed Common Ground System (DCGS) is a cooperative effort between the services, agencies, and the Department of Defense (DoD) to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS - Navy (DCGS-N) is the Navy instance of the Under Secretary of Defense, Intelligence (USD (I)) DCGS Family of Systems (FoS). The DoD has defined a DCGS architecture that will be compatible and interoperable across all of the Services Intelligence, Surveillance, and Reconnaissance (ISR) systems and operations. DCGS accesses and ingests data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. The DCGS Integrated Backbone (DIB) shares data collected across the joint enterprise. Further integration with Defense Intelligence Information Enterprise (DI2E) will enhance access and sharing of ISR information across Joint forces using common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance to maintain a tactical advantage over adversaries.

DCGS-N system fulfills a critical mission set Afloat and Ashore. DCGS-N processes and exploits tactical and Imagery Intelligence (IMINT), Geospatial Intelligence (GEOINT) and Signal Intelligence (SIGINT), facilitates precision target geopositioning, mensuration, and imagery capabilities, integrates national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA), and shares Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&T) and Command and Control information via the DIB, DI2E, and Net-Centric Enterprise Services (NCES) standards with a wide range of customers. The DCGS-N program conducts research and assessments of tactically relevant, emerging technologies program insertion to ensure superiority in the intelligence domain.

The DCGS-N Enterprise Node (DEN), which incorporates current DIB standards and DI2E policy, facilitates interoperability and data sharing among the DCGS FoS. DCGS-N complies with the DoD DCGS network architecture. The DCGS-N Analytics Node (DAN) is a cloud based instantiation of the DEN, and is the foundation for DCGS-N to transform DCGS-N into a modernized data environment.

DCGS-N Increment 1 Product Improvement includes DCGS-N hardware and software technical refresh, ancillary equipment and upgrades to extend service life and provide the fleet imagery intelligence capability. Equipment support includes the assembly and integration associated with the product improvements or modification.

DCGS-N Increment 2 will integrate emergent, transformational Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) technologies in order to streamline Sailor's analytical efforts and improve targeting solutions for the operator, optimizing and compressing the kill chain. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities and integrate Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capabilities to optimize the use and analysis of sensor and platform data. DCGS-N Increment 2 leverages enterprise solutions to share information across commands, services, and agencies to promote shared situational awareness. DCGS-N Increment 2 consists of multiple releases that build upon capability over

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0305208N, 0304785N
Line Item MDAP/MAIS Code: 000		

time and allow for ongoing fleet feedback as the software matures. DCGS-N Increment 2 will insert new technology enhancements via incremental software upgrades. Continued development of follow-on releases will be based upon on prioritized Fleet requirements.

DCGS-N Workstation Upgrades are required for DCGS-N afloat and ashore workstations to vastly improve the sailor's ability to run complex processes that involve large amounts of data (static and dynamic). Processing that currently takes hours could be reduced to minutes, applications that freeze while updating will become transparent to the user. Builder, ACE-M, Full Motion Video (FMV) and GALE workflow timelines will be reduced when used on these workstations. Upgraded workstations will also allow for the utilization of the full suite of DCGS-N Increment 2 capabilities as Capability Drops (CD's) are fielded.

Intelligence Carry-On Program (ICOP) provides Indications and Warnings (I&W), battlespace awareness/visualization and Intelligence Surveillance and Reconnaissance (ISR) Processing, Exploitation and Dissemination (PED) capabilities in support of Navy surface and expeditionary operations. The ICOP system includes a three-eyed ruggedized workstation that serves as a powerful afloat edge computing device that is capable of operating on all three security domains (NIPR, SIPR and JWICs) and an antenna/receiver set (called Communications Module 3 - CM3) that is used to ingest, process and exploit airborne sensor data. In addition to supporting multi-intelligence capabilities, ICOP/CM3 provides an end-to-end ISR PED architecture that includes processing organic shipboard camera systems to support Navy-wide Operational Task (OPTASK) Visual Information (Strategic Communications - "First to the Truth," pattern of life analysis and use of force/rules of engagement decisions).

In addition, the ICOP system supports the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with robust storage, processing and computing capability. ICOP adheres to the USD(I) interoperability mandates and federates with other Joint Distributed Common Ground System (DCGS) users via the DCGS Integrated Backbone (DIB). ICOP data is pushed to the shore-based DCGS Enterprise Node (DEN) for discovery, retrieve, and data enrichment. ICOP enables Unit-level ships and expeditionary customers to become part of the larger Intelligence Community (IC) enterprise.

For procurement activities, ICOP satisfies Unit-Level requirements as part of the DCGS-N Family of Systems. ICOP is currently budgeted to field to the following Unit-Level ships: DDG, CG, LPD class platforms. ICOP has been designated as a Navy equipage system (carry on/carry off). ICOP employs a cross-decking methodology by drawing from a rotable pool of workstations to support the total inventory objective of 91 ships. The ICOP workstation and Communications Module 3 (CM3) antenna/receivers are considered carry on/carry off equipment while the supporting infrastructure to mount the systems is considered permanent infrastructure. There are currently two methodologies for fielding - ships that receive both the ICOP workstation and CM3 antenna/receivers are considered "Full" Foundation Kit installations while ships that only receive the ICOP workstation are considered "Partial" Foundation Kit installations. ICOP Foundation Kits include all the Radio Frequencies (RF), network cabling and mounting plates. All CM3 antenna/receivers are required to be fielded with Type 1 Encryption devices IOT be able to ingest and process certain airborne platforms to include but not limited to: P-8 Poseidon, MQ-8C Firescout, MQ-9 Reaper, RQ-21 Black Jack and MH-60R Seahawk.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305208N, 0304785N

Line Item MDAP/MAIS Code: 000

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / ICOP	P-5a			- / 49.017	- / 0.000	- / 1.617	- / 1.775	- / 0.000	- / 1.775
P-5	2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years				- / 133.167	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	3 / DCGS-N Increment 1 Product Improvement Ashore	P-5a			- / 14.995	- / 2.662	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	4 / Product Improvement Afloat	P-5a			- / 77.959	- / 7.377	- / 4.750	- / 1.397	- / 0.000	- / 1.397
P-5	5 / DCGS-N Workstation Upgrades	P-5a			- / 0.000	- / 0.000	- / 5.100	- / 0.200	- / 0.000	- / 0.200
P-5	6 / DCGS-N Increment 2 Ashore	P-5a			- / 0.000	- / 0.000	- / 4.092	- / 5.216	- / 0.000	- / 5.216
P-3a	3 / DCGS-N Increment 2 Afloat (TBD)				- / 0.000	- / 0.180	- / 3.118	- / 10.284	- / 0.000	- / 10.284
P-40	**Total Gross/Weapon System Cost**				**- / 275.138**	**- / 10.219**	**- / 18.677**	**- / 18.872**	**- / 0.000**	**- / 18.872**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / ICOP	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-5	2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years				- / -	- / -	- / -	- / -	- / -	- / -
P-5	3 / DCGS-N Increment 1 Product Improvement Ashore	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-5	4 / Product Improvement Afloat	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-5	5 / DCGS-N Workstation Upgrades	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-5	6 / DCGS-N Increment 2 Ashore	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	3 / DCGS-N Increment 2 Afloat (TBD)				- / 12.095	- / 8.811	- / 9.478	- / 10.061	- / 209.073	- / 263.100
P-40	**Total Gross/Weapon System Cost**				**- / 17.457**	**- / 17.720**	**- / 18.118**	**- / 18.483**	**- / 209.073**	**- / 603.757**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Distributed Common Ground System - Navy (DCGS-N) Increment 1 planned procurements in FY21 is for (1) DCGS-N Inc 1, 2-rack afloat technical refresh.

DCGS-N Increment 2, planned procurements in FY21 consist of (8) DCGS-N Inc 2 Systems 1-rack Afloat systems (2) 4 rack Ashore systems and (2) Workstation Upgrades. The program was directed by Assistant Secretary of Navy Research, Development and Acquisition (ASN (RDA)) to begin installations concurrently with Initial Operational Test & Evaluation (IOT&E) to address DCGS-N Increment 1 current readiness challenges and provide capability to the fleet sooner. FY21 increase in Increment 2 Afloat DSA requirements is driven by the ramp up in procurements in FY21 (8 planned) over FY20 (4 planned) and higher costs for CVN installation design packages.

DCGS-N Increment 2 Ashore hardware procurements consist of Commercial off the Shelf (COTS) and Government off the Shelf (GOTS) build to print products which enable procurement and installation in the same FY. FY20 Ashore procurements will be installed in FY21 due to longer than anticipated timeline for initial procurement contract award. Procurement Lead Time (PLT) for Ashore units is shorter than Afloat units due to reduction in Acceptance Testing requirements at Ashore sites. FY21 Ashore procurements are being installed within the Continental United States (CONUS) further reducing installation timelines.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0305208N, 0304785N
Line Item MDAP/MAIS Code: 000		

Intelligence Carry-On Program (ICOP) planned procurements in FY21 include (24) ICOP Systems. ICOP systems will make-up a rotatable pool of non-permanent carry-on systems. Funding increase is to replace severely degraded operation units which must be removed from the fleet which would cause a loss of significant ISR capability.

The DCGS-N Inc 1 installations will replace the currently fielded legacy systems and leverage the Navy's Common Computing Environment (CCE) as applicable as well as provide upgrades to extend service life.

The DCGS-N Inc 2 installations will replace the currently fielded legacy systems and leverage the Navy's Common Computing Environment (CCE) as applicable as well as applying new capability to the fleet.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Item Number / Title [DODIC]: 1 / ICOP
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	49.017	0.000	1.617	1.775	0.000	1.775
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	49.017	0.000	1.617	1.775	0.000	1.775
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**49.017**	**0.000**	**1.617**	**1.775**	**0.000**	**1.775**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - ICOP Cost																		
Recurring Cost																		
1.1.1) ICOP Foundation Kit Procurement	31.374	91	2.855	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) ICOP System Procurement(†) (1)	266.986	73	19.490	-	-	0.000	69.000	22	1.518	70.000	24	1.680	-	-	0.000	70.000	24	1.680
1.1.3) CM3 Set Procurements	440.000	3	1.320	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*23.665*	-	-	*0.000*	-	-	*1.518*	-	-	*1.680*	-	-	*0.000*	-	-	*1.680*
Subtotal: Hardware - ICOP Cost	**-**	**-**	***23.665***	**-**	**-**	***0.000***	**-**	**-**	***1.518***	**-**	**-**	***1.680***	**-**	**-**	***0.000***	**-**	**-**	***1.680***
Hardware - INSTALLATIONS Cost																		
Recurring Cost																		
2.1.1) ICOP Foundation Kit Installation Afloat	-	-	19.507	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*19.507*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - INSTALLATIONS Cost	**-**	**-**	***19.507***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support Cost																		
3.1) ICOP Foundation Kit Production Support	-	-	0.211	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.2) ICOP System Production Support	-	-	1.353	-	-	0.000	-	-	0.099	-	-	0.095	-	-	0.000	-	-	0.095

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Item Number / Title [DODIC]: 1 / ICOP
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
3.3) ICOP Foundation Kit DSA	-	-	4.281	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support Cost	***-***	***-***	***5.845***	***-***	***-***	***0.000***	***-***	***-***	***0.099***	***-***	***-***	***0.095***	***-***	***-***	***0.000***	***-***	***-***	***0.095***
Gross/Weapon System Cost	**-**	**-**	**49.017**	**-**	**-**	**0.000**	**-**	**-**	**1.617**	**-**	**-**	**1.775**	**-**	**-**	**0.000**	**-**	**-**	**1.775**

Remarks:
Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates a menu of mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the Distributed Common Ground System-Navy (DCGS-N) Enterprise Node (DEN), and to provide data sharing to the Maritime Operations Centers (MOC) and National Intelligence, Surveillance and Reconnaissance (ISR) systems, making tactical users a part of the larger ISR enterprise.

(†) indicates the presence of a P-5a

Footnotes:
(1) ICOP System procurements include an ICOP Box and (2) Communications Module 3 (CM3) Antennas. (2) CM3 Antennas provides the platform with approximately 360 degree coverage. ICOP Systems will not be permanently installed on a Platform. After procurement, ICOP Systems will become a part of a rotatable pool of non-permanent carry-on systems for deploying Unit Level Platforms. ICOP workstation and CM3 antenna/receiver unit costs fluctuate depending on economy of scales. This is based on negotiated prices on ICOP Prime Mission Product (PMP) contract through FY24. ICOP Systems planned procurements in FY21 include (24) ICOP Systems.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 1 / ICOP

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.2) ICOP System Procurement		2020	BAE Systems / San Diego, CA	C / FFP	San Diego	Dec 2019	Mar 2020	22	69.000	Y		
1.1.2) ICOP System Procurement		2021	BAE Systems / San Diego, CA	C / FFP	San Diego	Dec 2020	Mar 2021	24	70.000	Y		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	133.167	0.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	133.167	0.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**133.167**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - 2914 DCGS-N Prior Year Cost																		
Recurring Cost																		
1.1.1) JSIPS-N Product Improvement Prior Years	-	-	40.572	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) DCGS-N Increment 1 Initial FRP Systems Prior Years	-	-	92.595	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*133.167*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - 2914 DCGS-N Prior Year Cost	**-**	**-**	***133.167***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**133.167**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Remarks:
Includes prior year funding for 2914 Distributed Common Ground System - Navy (DCGS-N) to include Joint Services Imagery Processing System - Navy (JSIPS-N) and Distributed Common Ground System - Navy (DCGS-N) Increment 1 Ashore and Afloat initial Full Rate Production (FRP) Systems. Includes both procurement and installation cost. P3As are no longer shown because funding is prior year only.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 3 / DCGS-N Increment 1 Product Improvement Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	14.995	2.662	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	14.995	2.662	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**14.995**	**2.662**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - DCGS-N Inc. 1 Cost																		
Recurring Cost																		
1.1.1) DCGS-N Tech Refresh/Upgrade(†)	907.857	14	12.710	768.500	2	1.537	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*12.710*	-	-	*1.537*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - DCGS-N Inc. 1 Cost	**-**	**-**	***12.710***	**-**	**-**	***1.537***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - Support Cost Cost																		
2.1) Production Support	-	-	0.960	-	-	0.100	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Support Cost Cost	**-**	**-**	***0.960***	**-**	**-**	***0.100***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - DSA Cost																		
3.1) DCGS-N Tech Refresh/Upgrade DSA	-	-	1.325	-	-	1.025	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - DSA Cost	**-**	**-**	***1.325***	**-**	**-**	***1.025***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**14.995**	**-**	**-**	**2.662**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Remarks:
Tech Refresh/Upgrade integration procures Commerical Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the Distributed Common Ground System-Navy (DCGS-N) program to include the processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); Precision target geopositioning, mensuration, and imagery dissemination capabilities; Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); Sharing of Intelligence, Surveillance,

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 3 / DCGS-N Increment 1 Product Improvement Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Reconnaissance and Targeting (ISRT) and Command and Control (C2) information via DCGS Integrated Backbone (DIB) and Net-Centric Enterprise Services (NCES) standards. Specifically, this funds tech refresh/upgrades/Engineering Change Proposals (ECPs) to its subsystems to provide access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers.

Related RDT&E PE
0305208N - FY19
0304785N - FY20-FY25

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 3 / DCGS-N Increment 1 Product Improvement Ashore

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) DCGS-N Tech Refresh/ Upgrade		2019	BAE / SAN DIEGO, CA	C / FFP	San Diego	Dec 2018	Jun 2019	2	768.500	Y		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 4 / Product Improvement Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	77.959	7.377	4.750	1.397	0.000	1.397
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	77.959	7.377	4.750	1.397	0.000	1.397
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**77.959**	**7.377**	**4.750**	**1.397**	**0.000**	**1.397**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - Product Improvement Afloat Cost																		
Recurring Cost																		
1.1.1) DCGS-N Tech Refresh Upgrade(†) (2)	987.032	31	30.598	778.000	5	3.890	810.000	2	1.620	950.000	1	0.950	-	-	0.000	950.000	1	0.950
Subtotal: Recurring Cost	-	-	*30.598*	-	-	*3.890*	-	-	*1.620*	-	-	*0.950*	-	-	*0.000*	-	-	*0.950*
Subtotal: Hardware - Product Improvement Afloat Cost	**-**	**-**	***30.598***	**-**	**-**	***3.890***	**-**	**-**	***1.620***	**-**	**-**	***0.950***	**-**	**-**	***0.000***	**-**	**-**	***0.950***
Hardware - DCGS-N Tech Refresh/Upgrade Installation Cost																		
Recurring Cost																		
2.1.1) Installation	-	-	35.103	-	-	2.850	-	-	2.585	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Recurring Cost	-	-	*35.103*	-	-	*2.850*	-	-	*2.585*	-	-	*0.300*	-	-	*0.000*	-	-	*0.300*
Subtotal: Hardware - DCGS-N Tech Refresh/Upgrade Installation Cost	**-**	**-**	***35.103***	**-**	**-**	***2.850***	**-**	**-**	***2.585***	**-**	**-**	***0.300***	**-**	**-**	***0.000***	**-**	**-**	***0.300***
Support - Support Cost Cost																		
3.1) Equipment Support	-	-	4.774	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.2) Production Support	-	-	3.454	-	-	0.253	-	-	0.391	-	-	0.127	-	-	0.000	-	-	0.127
3.3) DSA	-	-	4.030	-	-	0.384	-	-	0.154	-	-	0.020	-	-	0.000	-	-	0.020
Subtotal: Support - Support Cost Cost	**-**	**-**	***12.258***	**-**	**-**	***0.637***	**-**	**-**	***0.545***	**-**	**-**	***0.147***	**-**	**-**	***0.000***	**-**	**-**	***0.147***
Gross/Weapon System Cost	**-**	**-**	**77.959**	**-**	**-**	**7.377**	**-**	**-**	**4.750**	**-**	**-**	**1.397**	**-**	**-**	**0.000**	**-**	**-**	**1.397**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 4 / Product Improvement Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Remarks:

Tech Refresh/Upgrade integration procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the Distributed Common Ground System-Navy (DCGS-N) program for the processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); Precision target geopositioning, mensuration, and imagery dissemination capabilities; Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and Command and Control (C2) information via DCGS Integrated Backbone (DIB) and Net-Centric Enterprise Services (NCES) standards. Specifically, this funds tech refresh/upgrades/ Engineering Change Proposals (ECPs) to its subsystems to provide access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers.

RDT&E Related PE's
0305208N - FY19
0304785N - FY20-FY25

(†) indicates the presence of a P-5a

Footnotes:

(2) The cost increase in Product Improvement Afloat procurement unit cost is attributed to the variation in the Inc 1 technical refresh buy between FY20 and FY21. In FY21, (1) DCGS-N Inc 1 Tech Refreshes consists of a 2-rack Afloat technical refresh. Procurement costs range from $450K (for End-of-Life Afloat Hardware Upgrade) to $950K (for 2-rack Afloat technical refresh). Procuring a 2-rack Afloat technical refreshes drives the average unit cost higher in FY21. DCGS-N Inc 1 Block 1 and 2 unit costs represent an average cost based on 3 Rack, 2 Rack, 1 Rack, and End-of-Life Hardware Upgrade configurations dependent on specific platform (CVN, LHD, LCC, LHA), network, infrastructure versions, and alignment with the Navy's Network Infrastructure Common Computing Environment (CCE). In addition, unit costs continue to be updated based on actuals costs, locality and availability of platforms, and specific integration tasking associated with external dependent systems (e.g. Global Command and Control System - Maritime (GCCS-M), Radiant Mercury (RM), and others). Installation cost can fluctuate based on system configuration, products being installed and Hull the install is being performed on.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 4 / Product Improvement Afloat

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) DCGS-N Tech Refresh Upgrade		2019	BAE / SAN DIEGO, CA	C / FFP	** NO PCO **	Dec 2018	Jun 2019	5	778.000	Y		
1.1.1) DCGS-N Tech Refresh Upgrade		2020	BAE / SAN DIEGO, CA	C / FFP	** NO PCO **	Dec 2019	Jun 2020	2	810.000	Y		
1.1.1) DCGS-N Tech Refresh Upgrade		2021	BAE / SAN DIEGO, CA	C / FFP	** NO PCO **	Dec 2020	Jun 2021	1	950.000	Y		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 5 / DCGS-N Workstation Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	5.100	0.200	0.000	0.200
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	5.100	0.200	0.000	0.200
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**5.100**	**0.200**	**0.000**	**0.200**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - DCGS-N Workstation Upgrades Cost																		
Recurring Cost																		
1.1.1) DCGS-N Workstation Upgrade Procurements(†)	-	-	0.000	-	-	0.000	450.000	4	1.800	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*1.800*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - DCGS-N Workstation Upgrades Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***1.800***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - Installation Cost																		
Recurring Cost																		
2.1.1) DCGS-N Hardware Installation	-	-	0.000	-	-	0.000	-	-	2.264	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*2.264*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - Installation Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***2.264***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support Cost																		
3.1) DCGS-N Hardware Upgrades Production Support	-	-	0.000	-	-	0.000	-	-	0.116	-	-	0.000	-	-	0.000	-	-	0.000
3.2) DCGS-N Hardware Upgrades DSA	-	-	0.000	-	-	0.000	-	-	0.920	-	-	0.200	-	-	0.000	-	-	0.200
Subtotal: Support Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***1.036***	**-**	**-**	***0.200***	**-**	**-**	***0.000***	**-**	**-**	***0.200***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**5.100**	**-**	**-**	**0.200**	**-**	**-**	**0.000**	**-**	**-**	**0.200**

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 5 / DCGS-N Workstation Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Remarks:

Upgrades are required for DCGS-N afloat and ashore workstations to vastly improve the sailor's ability to run complex processes that involve large amounts of data (static and dynamic). Processing that currently takes hours could be reduced to minutes, applications that freeze while updating will become transparent to the user. Builder, ACE-M, Full Motion Video (FMV) and GALE workflow timelines will be reduced when used on these workstations. Upgraded workstations will also allow for the utilization of the full suite of DCGS-N Increment 2 capabilities as Capability Drops (CD's) are fielded.

Related RDT&E PE
0305208N - FY19
0304785N - FY20-FY25

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 5 / DCGS-N Workstation Upgrades

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) DCGS-N Workstation Upgrade Procurements		2020	TBD / TBD	C / FP	San Diego	Feb 2020	May 2020	4	450.000	Y		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 6 / DCGS-N Increment 2 Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	4.092	5.216	0.000	5.216
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	4.092	5.216	0.000	5.216
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**4.092**	**5.216**	**0.000**	**5.216**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - DCGS-N Increment 2 Ashore Cost																		
Recurring Cost																		
1.1.1) Procurements(†) (3)	-	-	0.000	-	-	0.000	1,921.000	2	3.842	1,612.500	2	3.225	-	-	0.000	1,612.500	2	3.225
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*3.842*	-	-	*3.225*	-	-	*0.000*	-	-	*3.225*
Subtotal: Hardware - DCGS-N Increment 2 Ashore Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***3.842***	**-**	**-**	***3.225***	**-**	**-**	***0.000***	**-**	**-**	***3.225***
Hardware - Installation Cost																		
Recurring Cost																		
2.1.1) DCGS-N Increment 2 Hardware Installation (4)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.781	-	-	0.000	-	-	1.781
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*1.781*	-	-	*0.000*	-	-	*1.781*
Subtotal: Hardware - Installation Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***1.781***	**-**	**-**	***0.000***	**-**	**-**	***1.781***
Support - Support Costs Cost																		
3.1) Production Support	-	-	0.000	-	-	0.000	-	-	0.250	-	-	0.210	-	-	0.000	-	-	0.210
Subtotal: Support - Support Costs Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.250***	**-**	**-**	***0.210***	**-**	**-**	***0.000***	**-**	**-**	***0.210***
Gross/Weapon System Cost	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**4.092**	**-**	**-**	**5.216**	**-**	**-**	**0.000**	**-**	**-**	**5.216**

Remarks:

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Item Number / Title [DODIC]:** 6 / DCGS-N Increment 2 Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Distributed Common Ground System - Navy (DCGS-N) Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities; integrate TCPED) capabilities to improve the use and analysis of sensor and platform data; based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness.

Related RDT&E PE's
0305208N - FY19
0304785N - FY20-FY25

(†) indicates the presence of a P-5a

Footnotes:

(3) Shore procurement unit cost varies based on installation location. Installation locations are training sites or Maritime Operational Center's (MOC's). Unit cost ranges from $0.600M for a MOC site (1 rack system) to a $2.3M training site (4 rack system).

(4) FY20 Ashore procurements will be installed in FY21 due to longer than anticipated timeline for initial procurement contract award.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Item Number / Title [DODIC]: 6 / DCGS-N Increment 2 Ashore

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Procurements		2020 (5)	NIWC / San Diego, CA	C / FFP	** NO PCO **	Feb 2020	Aug 2020	2	1,921.000	Y		
1.1.1) Procurements		2021 (6)	NIWC / San Diego, CA	C / FFP	** NO PCO **	Dec 2020	May 2021	2	1,612.500	Y		

Footnotes:

(5) FY20 Ashore procurements will be installed in FY21 due to longer award lead time and production lead time for initial procurement contract award. Procurement Lead Time (PLT) for Ashore units is shorter than Afloat units due to a reduction in Acceptance Testing requirements at Ashore sites.

(6) Ashore hardware procurements consist of Commercial off the Shelf (COTS) and Government off the Shelf (GOTS) build to print products which enable procurement and CONUS installations in the same FY.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Modification Number / Title:** 3 / DCGS-N Increment 2 Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.180	3.118	10.284	0.000	10.284	12.095	8.811	9.478	10.061	209.073	263.100
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.180	3.118	10.284	0.000	10.284	12.095	8.811	9.478	10.061	209.073	263.100
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.180**	**3.118**	**10.284**	**0.000**	**10.284**	**12.095**	**8.811**	**9.478**	**10.061**	**209.073**	**263.100**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities; integrate TCPED capabilities to improve the use and analysis of sensor and platform data; based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness.

Related RDT&E PE
0305208N
0304785N

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Modification Number / Title:** 3 / DCGS-N Increment 2 Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DCGS-N Increment 2 Afloat												
A Kits												
Recurring												
1.1.1) Procurement - NonOrganic (7)	- / -	- / -	4 / 2.119	8 / 4.320	- / -	8 / 4.320	5 / 2.700	5 / 2.700	6 / 3.240	6 / 3.240	- / 82.086	34 / 100.405
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 2.119*	*- / 4.320*	*- / -*	*- / 4.320*	*- / 2.700*	*- / 2.700*	*- / 3.240*	*- / 3.240*	*- / 82.086*	*- / 100.405*
Subtotal: DCGS-N Increment 2 Afloat	*- / -*	*- / -*	*4 / 2.119*	*8 / 4.320*	*- / -*	*8 / 4.320*	*5 / 2.700*	*5 / 2.700*	*6 / 3.240*	*6 / 3.240*	*- / 82.086*	*34 / 100.405*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 2.119*	*- / 4.320*	*- / -*	*- / 4.320*	*- / 2.700*	*- / 2.700*	*- / 3.240*	*- / 3.240*	*- / 82.086*	*- / 100.405*
Support *(All Modification Items)*												
2.1) Production Support	- / 0.000	- / 0.000	- / 0.160	- / 0.331	- / 0.000	- / 0.331	- / 0.201	- / 0.160	- / 0.195	- / 0.200	- / 5.336	- / 6.583
3.1) DSA (8)	- / 0.000	- / 0.180	- / 0.839	- / 1.433	- / 0.000	- / 1.433	- / 0.794	- / 0.701	- / 0.793	- / 0.321	- / 14.709	- / 19.770
Subtotal: Support	*- / 0.000*	*- / 0.180*	*- / 0.999*	*- / 1.764*	*- / -*	*- / 1.764*	*- / 0.995*	*- / 0.861*	*- / 0.988*	*- / 0.521*	*- / 20.045*	*- / 26.353*
Installation												
Modification Item 1 of 1: DCGS-N Increment 2 Afloat	- / 0.000	- / 0.000	- / 0.000	- / 4.200	- / 0.000	- / 4.200	- / 8.400	- / 5.250	- / 5.250	- / 6.300	- / 106.942	- / 136.342
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 4.200*	*- / -*	*- / 4.200*	*- / 8.400*	*- / 5.250*	*- / 5.250*	*- / 6.300*	*- / 106.942*	*- / 136.342*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.180**	**3.118**	**10.284**	**0.000**	**10.284**	**12.095**	**8.811**	**9.478**	**10.061**	**209.073**	**263.100**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2914 / Distributed Common Ground System-Navy (DCGS-N)	**Modification Number / Title:** 3 / DCGS-N Increment 2 Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DCGS-N Increment 2 Afloat

Manufacturer Information

Manufacturer Name: NIWC PAC [9]	Manufacturer Location: San Diego, CA
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 10

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates		Oct 2020	Oct 2021	Oct 2022	Oct 2023	Oct 2024	Oct 2025

Installation Information

Method of Implementation: [none specified]:: Installation Name: Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	4 / 4.200	0 / 0.000	4 / 4.200	- / -	- / -	- / -	- / -	0 / 0.000	4 / 4.200
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	8 / 8.400	- / -	- / -	- / -	0 / 0.000	8 / 8.400
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 5.250	- / -	- / -	0 / 0.000	5 / 5.250
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 5.250	- / -	0 / 0.000	5 / 5.250
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 6.300	0 / 0.000	6 / 6.300
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 106.942	6 / 106.942
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	4 / 4.200	0 / 0.000	4 / 4.200	8 / 8.400	5 / 5.250	5 / 5.250	6 / 6.300	6 / 106.942	34 / 136.342

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	1	1	2	2	3	1	2	2	1	2	-	-	1	2	2	-	2	2	2	6	34
Out	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	3	1	2	2	1	2	-	-	1	2	2	-	2	2	8	34

Footnotes:

[7] In FY21, DCGS-N Increment 2 Afloat system procurements will consist of (8) 1-rack Afloat systems. CTC Installation cost consists of continuing tech refreshes.

[8] FY21 increase in Increment 2 Afloat DSA requirements is driven by the ramp up in procurements in FY21 (8 planned) over FY20 (4 planned) and higher costs for CVN installation design packages.

[9] After the unit delivered there is additional time required for minimal integration and initial load of the data store

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2915 / CANES

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303138N

Line Item MDAP/MAIS Code: M417

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,863.021	404.891	409.571	389.585	0.000	389.585	430.142	403.953	398.159	410.347	2,366.429	7,076.098
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,863.021	404.891	409.571	389.585	0.000	389.585	430.142	403.953	398.159	410.347	2,366.429	7,076.098
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,863.021**	**404.891**	**409.571**	**389.585**	**0.000**	**389.585**	**430.142**	**403.953**	**398.159**	**410.347**	**2,366.429**	**7,076.098**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	7.268	8.834	7.957	-	7.957	5.431	8.812	10.386	12.161	7.746	68.595
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Consolidated Afloat Networks and Enterprise Services (CANES) is the Navy's Program of Record (POR) to replace and modernize existing afloat networks with a cyber-hardened, warfighting resilient hardware, software and enterprise services infrastructure to enable information warfare from and within the tactical domain to expand the Fleets digital competitive advantage. CANES provides complete network infrastructure including hardware, software, processing, storage, and end user devices for the Unclassified, Coalition, Secret and Sensitive Compartmented Information (SCI) enclaves to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aegis Ashore sites. CANES services include application hosting, data transport and storage, system management, cyber security, email, web, chat, collaboration, and voice and video services. CANES is designed using commercial sector industry best practices of reducing the number of separate Fleet networks and drives affordability with a single engineered technical solution across the Fleet from patrol craft to aircraft carriers. As much as possible, CANES relies on Commercial Off-The-Shelf (COTS) hardware and software to reduce development time and cost, and leverages commercial Information Technology (IT) approaches to include Development, Security, and Operations (DevSecOps) to drive rapid upgrades. It allows for streamlined acquisition, contracting, sustainment, and significant lifecycle efficiencies through consolidation of multiple configuration management baselines, logistics, and training efforts into a single unified support structure.

The CANES Application Integration effort provides common software governance, testing, processes, and tools to application developers, and conducts integration testing to confirm compatibility for hosted applications prior to fielding. More than eighty (80) hosted software applications and systems - including Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics, and Business domains - require the CANES infrastructure to operate in the tactical environment. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), no longer provide their own independent network hardware and now depend on CANES to field, host, and sustain their capabilities. CANES also provides a set of capabilities called Agile Core Services (ACS) which brings advanced data science capabilities and other common network services to allow hosted application developers to focus on the unique capabilities they provide.

CANES is funded and programmed to field regular technical updates in order to keep pace with rapidly evolving cyber security threats and meet emerging operational demands. CANES uses a DevSecOps framework to improve its engineering processes and speed the deployment of new cyber security, application hosting and technical updates. Future CANES systems will incorporate technologies such as Cloud computing, Machine learning, and Artificial Intelligence.

CANES is a mature program with an innovative Multi Award Contract (MAC) in place that has consistently proven capable of delivering on or ahead of schedule. Additionally, the program uses a robust Continuous Process Improvement (CPI) program to improve the delivery speed and quality of network capabilities to the Fleet.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2915 / CANES

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303138N

Line Item MDAP/MAIS Code: M417

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Consolidated Prior Year Requirements				- / 179.317	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / 5F010/5F777 CANES - Afloat Non-MIP (TBD)				- / 1,672.182	- / 379.469	- / 374.251	- / 374.623	- / 0.000	- / 374.623
P-3a	2 / 5F010/5F776 CANES - Ashore Non-MIP (TBD)				- / 11.522	- / 25.422	- / 35.320	- / 14.962	- / 0.000	- / 14.962
P-40	**Total Gross/Weapon System Cost**				**- / 1,863.021**	**- / 404.891**	**- / 409.571**	**- / 389.585**	**- / 0.000**	**- / 389.585**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Consolidated Prior Year Requirements				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / 5F010/5F777 CANES - Afloat Non-MIP (TBD)				- / 426.702	- / 395.952	- / 368.827	- / 400.112	- / 2,281.010	- / 6,673.128
P-3a	2 / 5F010/5F776 CANES - Ashore Non-MIP (TBD)				- / 3.440	- / 8.001	- / 29.332	- / 10.235	- / 85.419	- / 223.653
P-40	**Total Gross/Weapon System Cost**				**- / 430.142**	**- / 403.953**	**- / 398.159**	**- / 410.347**	**- / 2,366.429**	**- / 7,076.098**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The FY21 decrease in the Consolidated Afloat Networks and Enterprise Services (CANES) funding profile aligns CANES with available ship modernization windows and the program's capacity to procure and install the product. This ensures CANES is deployed to the Fleet as quickly as possible to mitigate cyber security threats, keep pace with increased computing requirements for hosted applications, and support Department of Defense (DoD) directives to remove End of Life (EOL) Windows Operating Systems software from the Fleet as quickly as feasible. Obsolete Commercial Off-The-Shelf (COTS) legacy hardware and the termination of cyber security support for legacy versions of COTS software products (Microsoft, RedHat, Linux) drive increased sustainment costs, reduce operational availability and create critical cyber security vulnerabilities in Navy Tactical Networks. Replacing these legacy networks and modernizing the tactical environment with CANES is the cornerstone for all Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) investments.

CANES receives additional funds in FY21 to begin adding Military Sealift Command (MSC) ships to the program's Target Inventory Objective (TIO).

FY 2021 - CANES funds are for the procurement of (20) Afloat production units (0 Force Level, 11 Unit Level, 6 Subs, 3 MSC) and (13) Technical Insertion units (3 Force Level, 6 Unit Level, 4 Subs), with integration and associated costs for pre-installation design and the installation of (18) Afloat production units and (18) Technical Insertion units. CANES funds will also be used for the procurement of (1) MSC First Article and the installation of (5) Ashore units.
It is important to note that procurement quantities across the Future Year Defense Program (FYDP) are the same CANES end item products referenced in CANES LI 2925. Installation quantities represent sites receiving CANES are also referenced in LI 2925. The associated dollars in this exhibit represent the non-Intell investment in the CANES system.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Item Number / Title [DODIC]:** 1 / Consolidated Prior Year Requirements
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	179.317	0.000	0.000	0.000	0.000	0.000
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	179.317	0.000	0.000	0.000	0.000	0.000
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**179.317**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Consolidated Prior Year Requirements Cost																		
Non Recurring Cost																		
1.1.1) Consolidated Prior Year Requirements	-	-	179.317	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*179.317*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost	**-**	**-**	***179.317***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**179.317**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

Remarks:
Consolidated Prior Year Requirements consists of: 1) CANES European Reassurance Initiative, 2) Operation Rolling Tide, and 3) Automated Digital Network System.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 1 / 5F010/5F777 CANES - Afloat Non-MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,672.182	379.469	374.251	374.623	0.000	374.623	426.702	395.952	368.827	400.112	2,281.010	6,673.128
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,672.182	379.469	374.251	374.623	0.000	374.623	426.702	395.952	368.827	400.112	2,281.010	6,673.128
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,672.182**	**379.469**	**374.251**	**374.623**	**0.000**	**374.623**	**426.702**	**395.952**	**368.827**	**400.112**	**2,281.010**	**6,673.128**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The consolidation of existing Afloat Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and Agile Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services. Migration of Non-Classified Enclave (NCE) capabilities into the CANES baseline. CANES is a mature program required to mitigate heightened cyber security threats across Navy tactical networks.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 1 / 5F010/5F777 CANES - Afloat Non-MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) Non-MIP	**Modification Type:** TBD	**Related RDT&E PEs:** 0303138N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP												
B Kits												
Recurring												
1.1.1) CANES - Afloat 5F010/5F777 (Non-MIP) - NonOrganic (1)	106 / 663.765	14 / 80.524	18 / 107.900	20 / 117.884	- / -	20 / 117.884	14 / 86.458	10 / 59.818	- / -	- / -	- / -	182 / 1,116.349
1.1.2) CANES - Afloat Technical Insertion (Non-MIP) - NonOrganic (2)	23 / 95.110	22 / 112.901	18 / 96.271	13 / 68.484	- / -	13 / 68.484	27 / 149.242	26 / 148.907	40 / 214.543	45 / 247.046	288 / 1,243.476	502 / 2,375.980
1.1.3) CANES - Service Life Extension Program (SLEP) (Non-MIP) - NonOrganic	8 / 8.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 8.424
Subtotal: Recurring	*- / 767.299*	*- / 193.425*	*- / 204.171*	*- / 186.368*	*- / -*	*- / 186.368*	*- / 235.700*	*- / 208.725*	*- / 214.543*	*- / 247.046*	*- / 1,243.476*	*- / 3,500.753*
Non-Recurring												
1.2.1) CANES - Afloat First Articles (Non-MIP) - Organic (3)	12 / 79.090	1 / 7.499	- / -	1 / 5.704	- / -	1 / 5.704	- / -	- / -	- / -	- / -	- / -	14 / 92.293
1.2.2) CANES - Non-Recurring Engineering (Non-MIP) - Organic	- / 26.907	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 26.907
Subtotal: Non-Recurring	*- / 105.997*	*- / 7.499*	*- / -*	*- / 5.704*	*- / -*	*- / 5.704*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 119.200*
Subtotal: 5F010/5F777 CANES - Afloat Non-MIP	*149 / 873.296*	*37 / 200.924*	*36 / 204.171*	*34 / 192.072*	*- / -*	*34 / 192.072*	*41 / 235.700*	*36 / 208.725*	*40 / 214.543*	*45 / 247.046*	*288 / 1,243.476*	*706 / 3,619.953*
Subtotal: Procurement, All Modification Items	*- / 873.296*	*- / 200.924*	*- / 204.171*	*- / 192.072*	*- / -*	*- / 192.072*	*- / 235.700*	*- / 208.725*	*- / 214.543*	*- / 247.046*	*- / 1,243.476*	*- / 3,619.953*
Support *(All Modification Items)*												
2.1) CANES - Afloat Production Support (Non-MIP)	- / 39.650	- / 9.340	- / 9.744	- / 8.645	- / 0.000	- / 8.645	- / 10.929	- / 9.222	- / 9.640	- / 11.263	- / 58.570	- / 167.003
2.2) CANES - Afloat Design Service Agent (Non-MIP)	- / 68.167	- / 13.347	- / 12.066	- / 11.266	- / 0.000	- / 11.266	- / 11.348	- / 9.842	- / 9.616	- / 11.836	- / 51.713	- / 199.201
Subtotal: Support	*- / 107.817*	*- / 22.687*	*- / 21.810*	*- / 19.911*	*- / -*	*- / 19.911*	*- / 22.277*	*- / 19.064*	*- / 19.256*	*- / 23.099*	*- / 110.283*	*- / 366.204*
Installation												
Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP	- / 691.069	- / 155.858	- / 148.270	- / 162.640	- / 0.000	- / 162.640	- / 168.725	- / 168.163	- / 135.028	- / 129.967	- / 927.251	- / 2,686.971
Subtotal: Installation	*- / 691.069*	*- / 155.858*	*- / 148.270*	*- / 162.640*	*- / -*	*- / 162.640*	*- / 168.725*	*- / 168.163*	*- / 135.028*	*- / 129.967*	*- / 927.251*	*- / 2,686.971*
Total												
Total Cost (Procurement + Support + Installation)	**1,672.182**	**379.469**	**374.251**	**374.623**	**0.000**	**374.623**	**426.702**	**395.952**	**368.827**	**400.112**	**2,281.010**	**6,673.128**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 1 / 5F010/5F777 CANES - Afloat Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP

Manufacturer Information

Manufacturer Name: Multiple Vendors (CANES - Afloat 5F010/5F777) (4) | Manufacturer Location: Various

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Nov 2020				
Delivery Dates	Jun 2019	Jun 2020	May 2021				

Manufacturer Name: Multiple Vendors (CANES - Afloat Technical Insertion) | Manufacturer Location: Various

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Nov 2020				
Delivery Dates	Jun 2019	Jun 2020	May 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Afloat 5F010/5F777 (Non-MIP)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	86 / 625.656	20 / 117.438	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	106 / 743.094
FY 2019	- / -	2 / 9.700	12 / 75.415	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 85.115
FY 2020	- / -	- / -	- / -	18 / 105.957	0 / 0.000	18 / 105.957	- / -	- / -	- / -	- / -	0 / 0.000	18 / 105.957
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	20 / 124.298	- / -	- / -	- / -	0 / 0.000	20 / 124.298
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 81.137	- / -	- / -	0 / 0.000	14 / 81.137
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 53.924	- / -	0 / 0.000	10 / 53.924
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	86 / 625.656	22 / 127.138	12 / 75.415	18 / 105.957	0 / 0.000	18 / 105.957	20 / 124.298	14 / 81.137	10 / 53.924	- / -	0 / 0.000	182 / 1,193.525

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 1 / 5F010/5F777 CANES - Afloat Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Afloat 5F010/5F777 (Non-MIP)

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	83	4	11	2	8	-	5	4	3	3	7	2	6	2	9	4	5	5	4	4	1	3	4	1	2	-	-	-	-	-	182
Out	82	1	4	11	2	8	-	5	4	3	3	7	2	6	2	9	4	5	5	4	4	1	3	4	1	2	-	-	-	-	182

Method of Implementation: [none specified]:: Installation Name: CANES - Afloat Technical Insertion (Non-MIP)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	14 / 58.214	9 / 28.720	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	23 / 86.934
FY 2019	- / -	- / -	22 / 72.855	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	22 / 72.855
FY 2020	- / -	- / -	- / -	18 / 56.683	0 / 0.000	18 / 56.683	- / -	- / -	- / -	- / -	0 / 0.000	18 / 56.683
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	13 / 44.427	- / -	- / -	- / -	0 / 0.000	13 / 44.427
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	27 / 87.026	- / -	- / -	0 / 0.000	27 / 87.026
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	26 / 81.104	- / -	0 / 0.000	26 / 81.104
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	40 / 129.967	0 / 0.000	40 / 129.967
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	45 / 136.224	45 / 136.224
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	288 / 791.027	288 / 791.027
Total	14 / 58.214	9 / 28.720	22 / 72.855	18 / 56.683	0 / 0.000	18 / 56.683	13 / 44.427	27 / 87.026	26 / 81.104	40 / 129.967	333 / 927.251	502 / 1,486.247

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	14	2	2	1	4	5	4	10	3	2	5	6	5	2	2	4	5	5	11	3	8	7	7	4	8	11	14	7	8	333	502
Out	10	4	2	2	1	4	5	4	10	3	2	5	6	5	2	2	4	5	5	11	3	8	7	7	4	8	11	14	7	341	502

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 1 / 5F010/5F777 CANES - Afloat Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Service Life Extension Program (SLEP) (Non-MIP)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	8 / 7.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 7.199
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 7.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 7.199

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Method of Implementation (Organic): CANES - Afloat First Articles (Non-MIP) - Not Installed **Installation Quantity:** 14

Footnotes:

(1) The procurement average unit cost fluctuation is due to variance in system configuration requirements for each CANES platform type. - A CANES unit level platform (DDG/CG/LSD) requires a smaller system, supporting fewer users and applications than force level platforms (CVN/LHD/LHA/LCC) with a greater number of users and applications. For example, a CANES DDG design consists of 18 equipment racks and ~400 workstations, while a CANES CVN system consists of 51 equipment racks and ~3000 workstations. The average procurement cost (hardware, software, integration, and engineering support) for a unit level ship ranges from $5.2M to $7.5M, while the average procurement cost for a force level platform ranges from $11.8M to $15.6M, and submarine unit procurement costs range from $2.7M to $4.6M. These costs include both the MIP and non-MIP components of the CANES units. - CANES Afloat installations are performed at several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The Naval Information Warfare Command (NAVWAR) Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY21 - 25 CANES installation plan. - CANES Afloat production units require an additional 5 months after delivery for integration, assembly and testing prior to installation start. Installations do not begin until 11 months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months. - Installation cost fluctuations are attributed to and dependent on ship location, class, and variant of predecessor system the hull currently has installed. As an example of variant differences, if a CVN has an ISNS Delta variant installed, a CANES

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 1 / 5F010/5F777 CANES - Afloat Non-MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

installation is estimated to be $18.2M. If that same CVN had a legacy Asynchronous Transfer Mode Local Area Network (ATM LAN) the CANES installation is estimated to be $22.4M. This cost difference is driven by a number of issues such as the requirement for new or additional wiring, equipment, and configuration changes.

(2) The decrease in Tech Insertion production unit cost from FY20 to FY21 is due to a lower percentage of more expensive Force Level units in FY21 compared to FY20. - CANES technical insertion installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The NAVWAR Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY20 - 24 CANES installation plan. - CANES Afloat technical insertion units require an additional 5 months after delivery for operational integration, assembly and testing prior to installation start. Installations do not begin until 11 months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months.

(3) First Article Procurement added in FY21 to support addition of Maritime Sealift Command (MSC) platforms to CANES Target Inventory Objective. CANES first articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. CANES First Articles are not installed.

(4) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. Contract will be used for both production and tech refresh units

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 2 / 5F010/5F776 CANES - Ashore Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	11.522	25.422	35.320	14.962	0.000	14.962	3.440	8.001	29.332	10.235	85.419	223.653
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	11.522	25.422	35.320	14.962	0.000	14.962	3.440	8.001	29.332	10.235	85.419	223.653
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**11.522**	**25.422**	**35.320**	**14.962**	**0.000**	**14.962**	**3.440**	**8.001**	**29.332**	**10.235**	**85.419**	**223.653**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The consolidation of existing Ashore Network programs of record designed to provide a single, agile, responsive Common Computing Environment (CCE) hardware and software suite which will host Command and Control, Warfare, Intelligence, Logistics, Business, and Education/Training applications and services for Maritime Operation Centers (MOC), Aegis Ashore (AA), and Technical Training Equipment (TTE) sites. CANES will provide complete Local Area Network (LAN) infrastructure and services inclusive of hardware, software, processing, storage, workstations, and tablets for all basic network services (email, web, chat, collaboration) at these sites.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 2 / 5F010/5F776 CANES - Ashore Non-MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) Non-MIP	**Modification Type:** TBD	**Related RDT&E PEs:** 0303138N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: 5F010/5F776 CANES - Ashore Non-MIP												
B Kits												
Recurring												
1.1.1) CANES - Ashore 5F010/5F776 (Non-MIP) - NonOrganic (5)	3 / 4.734	3 / 15.479	5 / 26.751	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 46.964
1.1.2) CANES - Ashore - Technical Insertion (Non-MIP) - NonOrganic	- / -	2 / 3.939	- / -	- / -	- / -	- / -	1 / 3.014	2 / 5.847	8 / 23.780	- / -	24 / 55.849	37 / 92.429
Subtotal: Recurring	*- / 4.734*	*- / 19.418*	*- / 26.751*	*- / -*	*- / -*	*- / -*	*- / 3.014*	*- / 5.847*	*- / 23.780*	*- / -*	*- / 55.849*	*- / 139.393*
Non-Recurring												
1.2.1) CANES - Ashore First Articles (Non-MIP) - Organic (6)	1 / 3.481	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.481
Subtotal: Non-Recurring	*- / 3.481*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 3.481*
Subtotal: 5F010/5F776 CANES - Ashore Non-MIP	*4 / 8.215*	*5 / 19.418*	*5 / 26.751*	*- / -*	*- / -*	*- / -*	*1 / 3.014*	*2 / 5.847*	*8 / 23.780*	*- / -*	*24 / 55.849*	*49 / 142.874*
Subtotal: Procurement, All Modification Items	*- / 8.215*	*- / 19.418*	*- / 26.751*	*- / -*	*- / -*	*- / -*	*- / 3.014*	*- / 5.847*	*- / 23.780*	*- / -*	*- / 55.849*	*- / 142.874*
Support *(All Modification Items)*												
2.1) CANES - Ashore Production Support (Non-MIP)	- / 0.187	- / 0.837	- / 1.272	- / -	- / -	- / -	- / 0.426	- / 0.516	- / 1.108	- / 1.113	- / 1.154	- / 6.613
2.2) CANES - Ashore Design Services Agent (Non-MIP) (7)	- / -	- / 0.537	- / 1.920	- / 2.033	- / -	- / 2.033	- / -	- / 0.470	- / 2.109	- / 0.580	- / 1.689	- / 9.338
Subtotal: Support	*- / 0.187*	*- / 1.374*	*- / 3.192*	*- / 2.033*	*- / -*	*- / 2.033*	*- / 0.426*	*- / 0.986*	*- / 3.217*	*- / 1.693*	*- / 2.843*	*- / 15.951*
Installation												
Modification Item 1 of 1: 5F010/5F776 CANES - Ashore Non-MIP	- / 3.120	- / 4.630	- / 5.377	- / 12.929	- / 0.000	- / 12.929	- / 0.000	- / 1.168	- / 2.335	- / 8.542	- / 26.727	- / 64.828
Subtotal: Installation	*- / 3.120*	*- / 4.630*	*- / 5.377*	*- / 12.929*	*- / -*	*- / 12.929*	*- / -*	*- / 1.168*	*- / 2.335*	*- / 8.542*	*- / 26.727*	*- / 64.828*
Total												
Total Cost (Procurement + Support + Installation)	**11.522**	**25.422**	**35.320**	**14.962**	**0.000**	**14.962**	**3.440**	**8.001**	**29.332**	**10.235**	**85.419**	**223.653**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 2 / 5F010/5F776 CANES - Ashore Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 5F010/5F776 CANES - Ashore Non-MIP

Manufacturer Information

Manufacturer Name: TBD (Competitive Procurement) | Manufacturer Location: TBD (Competitive Procurement)

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Nov 2019					
Delivery Dates	Jun 2019	May 2020					

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Ashore 5F010/5F776 (Non-MIP)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	3 / 3.120	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.120
FY 2019	- / -	1 / 2.692	2 / 5.377	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 8.069
FY 2020	- / -	- / -	- / -	5 / 12.929	0 / 0.000	5 / 12.929	- / -	- / -	- / -	- / -	0 / 0.000	5 / 12.929
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 3.120	1 / 2.692	2 / 5.377	5 / 12.929	0 / 0.000	5 / 12.929	- / -	- / -	- / -	- / -	0 / 0.000	11 / 24.118

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	-	-	1	-	2	-	-	-	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Out	2	1	-	-	-	1	-	2	-	1	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2915 / CANES	**Modification Number / Title:** 2 / 5F010/5F776 CANES - Ashore Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 5F010/5F776 CANES - Ashore Non-MIP

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Ashore - Technical Insertion (Non-MIP)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	2 / 1.938	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.938
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.168	- / -	- / -	0 / 0.000	1 / 1.168
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.335	- / -	0 / 0.000	2 / 2.335
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 8.542	0 / 0.000	8 / 8.542
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 26.727	24 / 26.727
Total	- / -	2 / 1.938	- / -	- / -	- / -	- / -	- / -	1 / 1.168	2 / 2.335	8 / 8.542	24 / 26.727	37 / 40.710

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	2	-	2	4	24	37
Out	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	2	-	2	28	37

Method of Implementation (Organic): CANES - Ashore First Articles (Non-MIP) - Not Installed **Installation Quantity:** 1

Footnotes:

(5) Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (3) Maritime Operation Center (MOC)(including Aegis Ashore) - PY (0); FY19 (3), FY20 (5). -A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note. -TTE has no associated DSA requirements. -Production Lead Time is 6 months for Ashore units. Total Ashore lead time, including 1 month Admin lead time and 5 months for integration, assembly and testing, is 12 months.

(6) First Articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. CANES First Articles are not installed.

(7) Prior to FY19, all Ashore units consisted of TTE procurements and installations, which do not require DSA, all Ashore units procured in FY20 are MOC units, which require DSA.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2920 / RADIAC

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	62.145	8.175	6.450	10.335	0.000	10.335	9.306	9.263	9.389	9.847	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	62.145	8.175	6.450	10.335	0.000	10.335	9.306	9.263	9.389	9.847	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**62.145**	**8.175**	**6.450**	**10.335**	**0.000**	**10.335**	**9.306**	**9.263**	**9.389**	**9.847**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure ionizing radiation. These instruments are used on all Navy, Coast Guard and Military Sealift Command vessels, and at every Navy shore installation, in order to ensure the safety of personnel, continuity of operations in radiological or nuclear contingencies, and protection of the environment.

The APD increase was necessary in order to regain the original procurement objective schedule after production delays caused by engineering changes required to accommodate the COLUMBIA class of submarines and technical delays related to issues with subcontractor components.

Increases in quantities of the Radiological Detection System (RDS) have also occurred in this budget, due to the realignment of funds previously budgeted for the Mk2 Electronic Personal Dosimeter (EPD). The vendor for the EPD defaulted on its projections for the final production run of the EPD, freeing up approximately $2.5M that was applied to RDS in 2020-2022. This increase will enhance the ability to meet the procurement objective for RDS.

[P40A / M2100 - Survey Meters]: M2100. Radiation survey meters, required by 10 CFR 20 and the Navy's mission, are used to detect, measure and monitor radiation levels in support of operations involving radioactive materials. Navy operations associated with radioactive materials include operation of nuclear reactors, maintenance on radioactive systems or components, testing of components for structural integrity (X-ray), research, and medical diagnostics and treatment. Additionally, radiation survey meters are used to search for, locate and intercept radioactive material, and in responding to casualties involving radioactive materials. Where radiation survey meters are used to support operations involving radioactive material, they provide real-time information used to control personnel radiation exposure and to identify and control the spread of radioactivity. When used to search for radioactive material, they provide an extremely reliable method of identifying radioactive material while minimizing the risk to personnel conducting these operations.

[P40A / Radiological Detection System]: M2100, Radiological Detection System (RDS): This is a basic RADIAC instrument used in Consequence Management and Occupational Safety and Health applications by all ships (U.S. Navy, U.S. Coast Guard and Military Sealift Command) and shore commands. It is used to survey for radioactive surface contamination pursuant to nuclear plant operations or nuclear plant maintenance; following medical procedures involving radioactive isotopes; or casualties and events that release radioactivity into the environment such as after a nuclear reactor accident or the use of weapons involving nuclear devices or radioactivity. It is also used to perform surveys for various types of radiation in order to monitor environmental conditions in areas and spaces immediately adjacent to where radioactive material is stored or used during routine operations; where nuclear plant operations occur; and where radioisotopes are used for maintenance, such as during industrial radiography operations.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2920 / RADIAC	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0708017N	**Other Related Program Elements:** 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		

The RDS consists of a Control Unit and a suite of probes that survey for different types of radioactivity (Alpha, Beta, Gamma, Neutron). Also part of the procurement will be various types of connecting cables; carrying cases; telescoping handles; and three specialty probes. The Control Unit is necessary for all applications while the probes are used for different applications. That means the Control Unit will have the highest procurement objective and the probes and ancillary equipment will be bought in varying quantities.

This instrument will replace the Navy's 30-year old IM-265/PDQ Multi-Function RADIAC Control Unit and its probes. The RDS is being developed by the Joint Product Leader for Radiological and Nuclear Defense (JPdL-RND) in order that the Army, Navy, Marine Corps, Air Force (and some NATO allies) will all have a Joint instrument that will enable interoperability and surge support of assets from all the components to forward deployed units in a theater of operations where a radiological event arises.

[P40A / M2200 - Dosimetry]: M2200. Dosimetry consists of radiation sensitive materials that are used for detecting and measuring an individual's exposure to ionizing radiation and to aid in minimizing this exposure. Dosimetry is required to be worn by personnel who work with sources of radioactivity or by personnel responding to casualties involving radioactivity. Most dosimeters are small devices that are worn on the belt, on a lanyard around the neck or attached to a shirt. Some dosimeters provide direct readout enabling the wearer to monitor and control radiation exposure. Other types of dosimeters must be removed from the wearer to be evaluated in special dosimeter readers that extract the recorded radiation exposure value from the dosimeter. Radiation exposure measured by dosimetry is recorded in individual medical records when formal tracking of the radiation exposure is required.

In accordance with 10 CFR 20, dosimetry is required to be worn by personnel who work with sources of radioactivity. In the Navy this includes personnel in the Nuclear Propulsion, Nuclear Weapons, and Medical and Radiological Affairs Support programs. In these programs radiation exposure is measured by dosimetry and recorded in individual medical records for tracking purposes. Dosimetry is also worn by personnel responding to casualties involving radioactivity to control their exposure within acceptable levels.

[P40A / DT-702 Card Holder]: M2200, DT-702 Card Holder: A plastic case into which the DT-702 card is placed for the card's protection and so it can be worn on a lanyard or on a belt. It has four circular windows made of specific materials of various thickness to allow the proper filtration of radiation to the dosimeter elements under each of the windows.

[P40A / Extremity Dosimeter]: M2200, Extremity Dosimeter: An extremity dosimeter is used to measure concentrated exposure to the hands when a radiation worker is reaching into a glove box or medical personnel are performing fluoroscopy tasks. This item is composed of three inexpensive pieces: 1) a plastic ring ($2) to wear on a finger; 2) a dosimeter ($36) that measures exposure; and 3) a cap that secures the dosimeter to the ring. The cap is made to a specific thickness depending on the type of radiation the dosimeter is intended to measure ($3). These items will be procured in quantities of 3,000 each. An average unit cost for the three items is used and all 9,000 components are shown on this one Cost Element.

[P40A / Accident Dosimeter]: M2200, Accident Dosimeter: The Accident Dosimeter is a passive type nuclear dosimeter capable of detecting and recording fast neutron radiation exposures. These dosimeters are used to determine radiation dose to the crew in the event of an accident affecting operation of a nuclear reactor. These dosimeters are fastened near or adjacent to reactor compartments on all Navy submarines and carriers.

[P40A / Accident Dosimeter High Purity Germanium Detector]: M2200, Accident Dosimeter High Purity Germanium Detector: The portable High Purity Germanium (HPGe) Detector is used to measure the photon radiation emitting from the dosimeter as a result of the reactor accident. This instrument is used at the Naval Dosimetry Center to evaluate the results of an accident.

[P40A / Accident Dosimeter Alpha/Beta Detector]: M2200, Accident Dosimeter Alpha/Beta Detector: The portable Alpha/Beta Detector is used to measure the alpha and beta radiation emitting from the dosimeter as a result of a reactor accident. This instrument is used at the Naval Dosimetry Center to evaluate the results of an accident.

[P40A / Accident Dosimeter Data & Training]: M2200, Accident Dosimeter Data & Training: The Naval Dosimetry Center staff will be trained on how to evaluate the dosimeter. The vendor will supply Technical Manuals, Technical Repair Standards and Standard Calibration Procedure documentation in order for the detectors purchased to be maintained by Navy Radiation Calibration Laboratories.

[P40A / Battlefield Dosimeter]: M2200, Battlefield Dosimeter: A dosimeter designed for use during nuclear or radiological events involving high energy gamma and neutron irradiation. An "event" can be a nuclear reactor accident, such as the Fukushima disaster in 2011, or an attack on, e.g., a Carrier Strike Group using a nuclear or radiological (dirty bomb) weapon. The concept of operations for such a dosimeter

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2920 / RADIAC	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0708017N	**Other Related Program Elements:** 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		

is that it is issued at MOP (Military Operational Posture) III to allow the commander to manage the exposure received by members of recovery teams who would be deployed in order to maintain continuity of operations. It is also used to perform triage on casualties, allowing medical personnel to most effectively allocate their resources.

[P40A / Battlefield Dosimeter Cases]: M2200, Battlefield Dosimeter Cases: The Battlefield Dosimeter will spend much of its time aboard ships stored in Damage Control Lockers. The instrument will also have to be shipped to and from a RADIAC Calibration Laboratory to undergo periodic calibrations. Because allowances for the instruments on the various ship classes range from 12 on an LCS to 700 each on a CVN, cases configured to hold different quantities (25, 50, 100) will be procured to afford the necessary protection for storage and shipping while maximizing shipboard storage space efficiency.

[P40A / Electronic Personal Dosimeter]: M2200, Electronic Personal Dosimeter (EPD): An electronic dosimeter that includes a real-time digital display of radiation dose being received. These so-called secondary dosimeters are normally used in conjunction with the DT-702 primary dosimeter in order to provide the wearer with real-time radiation dose information and alarm features that aid workers in controlling their radiation exposure. The DT-702 (Cost Element 2.1) is the Navy's approved dosimeter to record dose of record in each individual's medical record, but it is a "passive" device; i.e., it does not immediately display the dose being received. Instead, the dose is stored on the card on four different elements. It must be turned in and read by a machine (the 8800 Reader), a process that takes weeks, and therefore does not indicate if the wearer is in imminent danger.

[P40A / M2200 NWCF Contract Service Fee]: M2200 NWCF Contract Service Fee: The contract officer for hardware acquisitions is a Navy Working Capital Fund (NWCF)activity that charges a set fee for each contract award and modification. The applicable fee(s) for a given year are applied to the total value of the Cost Code hardware acquisitions.

[P40A / M2400 - Other RADIAC]: M2400. Other RADIAC. The RADIAC Program fields 70 different families of instruments, consisting of a total of almost 43,000 instruments and 400,000 dosimeters. Those families that fall into similar functionality have been grouped here into the M2100, M2200, M2500 and M2600 Cost Codes. The M2400 Cost Code consists of instruments that have specialized functions that only they perform, and therefore would require an unmanageable and meaningless number of additional Cost Codes if each were addressed individually. In the context of the family metaphor used here, these instruments are no less important but are orphans in the sense there are not many of similar functionality with which they could be grouped.

This Cost Code also supports replenishment of Ready for Issue (RFI) stocks when instruments in any Cost Code fall below stock levels sufficient to meet quarterly demand. This Cost Element (Spares) is a Continuing element that varies year-to-year based on emergent requirements and the quantity and unit cost of the item(s) being replenished.

[P40A / Spares]: M2400, Spares: Purchase of additional quantities of existing models of RADIACs to replenish or supplement stocks of items due to minor increases in program allowances, inventory losses, or due to assets being beyond economical repair.

[P40A / M2500 - Air Sampling Systems]: M2500. Monitoring for airborne radioactivity is done to detect leaks from nuclear reactors or associated systems to ensure that radioactivity is not inadvertently released to the environment from these operations. Additionally, monitoring for airborne radioactivity is performed during maintenance on radioactive components or during events that might cause radioactivity to be released to the air. Monitoring for airborne radioactivity is normally done by drawing air across filter paper to collect airborne radioactive particles. This filter paper is then evaluated by radiation detectors and the concentration of airborne radioactivity is calculated. The types of airborne radioactivity monitoring systems include fixed systems and portable systems.
Fixed systems sample air from pre-determined locations and normally include built-in radiation detectors for determining the airborne radioactivity concentration. Portable systems can be used to sample air at any desired location, but normally require the use of separate radiation detection instruments to measure the radioactive particles deposited on the filter paper to determine the airborne radioactivity concentration.

[P40A / Air Particle Detector (APD) Ship Frames]: M2500, Air Particle Detector (APD), Ship, Frames: In accordance with the referenced standard, the currently fielded IM-239/WDQ frames and some specific components are Restored, which is defined in the reference as making the equipment ". . . conform to the current technical specifications for the item . . . and the restoration of the equipment's physical appearance to the manufacturer's original condition (like new)." The Government provides these units as Government Furnished Property (GFP) to the vendor building the IM-272/WDQ APD, into which they build and install modern components.

[P40A / APD Ship]: M2500, Air Particle Detector, Ship: Airborne radioactivity monitoring system that is required for use on CVNs and all submarines. This system (IM-272A/WDQ) is a replacement for the existing IM-239/WDQ used on all Navy submarines and carriers. The IM-272A/WDQ incorporates significant technology enhancements that will reduce spurious false alarms and reduce operator maintenance.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2920 / RADIAC	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0708017N	**Other Related Program Elements:** 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		

[P40A / APD Ship Conversion]: M2500, APD Ship Conversion: Under the new contract awarded in September 2019, 10 of the 30 IM-272/WDQ units procured in FY17 will be converted to the IM-272A/WDQ to enable them to be fielded.

[P40A / APD Ship Data]: M2500, Air Particle Detector, Ship Data: Technical Manuals for the operation and preventive maintenance of the equipment.

[P40A / APD Ship Provisioning]: M2500, Air Particle Detector, Ship Provisioning: In June 2019 the APD Ship Configuration Audit will validate the "as-built" production unit against the Technical Data Package. The audit will also verify compliance with the Performance and Testing Specification.

[P40A / APD Ship GFP Repair by Contractor]: M2500, Air Particle Detector, Ship GFP Repair by Contractor: The APD Ship utilizes GFP in its design. The Government prepares the GFP prior to shipment to the contractor. Certain pieces require additional repair work by the contractor. The Government will fund the contractor to repair GFP as needed in order to mitigate risks to cost and schedule.

[P40A / APD Ship Drawing Revisions]: M2500, Air Particle Detector, Ship Drawing Revisions: The Government is providing the Technical Data Package (TDP) to the contractor to build the APD Ship. The contractor may identify issues with the TDP that need to be resolved prior to manufacturing the assemblies and subassemblies within the APD. The Government will assess whether the issues require adjudication prior to production. The contractor will be funded to correct these issues upon contract award.

[P40A / APD Ship Program Reviews]: M2500, Air Particle Detector, Ship Program Reviews: The contractor will host quarterly program reviews during the life of the contract, to be conducted at the contractor's site. The contractor will brief topics to include, but not limited to, testing and manufacturing issues, Government Furnished Property (GFP) usage, and the milestone plan. Risks to the schedule and the corresponding risk mitigation methods shall be discussed. The contractor will make a teleconference line available for individuals not able to attend the review in person.

[P40A / Air Particle Sampler]: M2500, Air Particle Sampler: Portable airborne radioactivity sampling system. Used during radiological work or during radiological casualties to draw air across a filter paper to collect radioactive particles. The filter paper is then evaluated using separately provided radiation detectors to determine the concentration of airborne radioactivity.

[P40A / Tritium Monitor]: M2500, Tritium Monitor: The AN/PDR-73 Tritium Monitor is used at nuclear weapons storage facilities and research laboratories to sample the air for the presence of tritium, which is a toxic radiation hazard if inhaled. It is 30 years old and cannot be repaired due to obsolete components. At the current loss rate due to normal wear and tear there will be insufficient assets to meet operational requirements, so a replacement must be procured.

[P40A / Tritium Monitor Testing, Data, Parts & Training]: M2500, Tritium Monitor Testing, Data, Parts & Training: Electro Magnetic Interference testing, Testing Manuals, Technical Repair Standard. Training of RADIAC Calibration Laboratory electronic technicians and program engineers on how to maintain the equipment.

[P40A / M2500 NWCF Contract Service Fee]: M2500 NWCF Contract Service Fee: The contract officer for hardware acquisitions is a Navy Working Capital Fund (NWCF)activity that charges a set fee for each contract award and modification. The applicable fee(s) for a given year are applied to the total value of the Cost Code hardware acquisitions.

[P40A / M2600 - Laboratory Test Equipment]: M2600. This Cost Code supports specialized equipment usually found in laboratories, hospitals and test facilities. This kind of equipment is distinct enough to warrant separating it for management purposes from the M2400 Cost Code.

[P40A / Calibrators]: M2600, Calibrators: Calibrators (also known as irradiators) are the basic tool used to calibrate all Navy radiological detection equipment. They consist of a high energy radiological source (Cs-137) in a shielded container that is located in a specially constructed and shielded room, or "range." A technician places the instrument to be calibrated at a specific calibration point in the range and remotely operates the calibrator by raising the source out of its container so that the radiological source becomes exposed and it irradiates the instrument. The instrument's response to the radiation is measured so that it can be calibrated to specific tolerances.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2920 / RADIAC	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0708017N	**Other Related Program Elements:** 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		

[P40A / Calibrator, No Source]: M2600, Calibrator, No Source: This unit will be located at the lead RADIAC Calibration Laboratory where technicians and engineers will be trained on calibrator maintenance, troubleshooting, and repair without requiring the constraints of exercising radiation exposure controls.

[P40A / Calibrator Initial Spare Parts, Installation & Training]: M2600, Calibrator Initial Spare Parts, Installation & Training: Initial spare parts and vendor training at each of the seven RADIAC Calibration Laboratories where the equipment will be installed. The vendor will ship and install the calibrators at each of the seven Navy RADIAC Calibration Laboratories.

[P40A / Liquid Scintillation Counter]: M2600, Liquid Scintillation Counter: The primary radioisotope of concern at nuclear weapons storage facilities is tritium (H-3), which presents itself in particulate and gaseous form. To monitor facilities for particulate tritium, radiological "swipes" are collected from various surfaces and then analyzed in a LSC to measure a representative amount of any contamination present. The LSC is calibrated to detect radiation with energies that match the isotopes of interest. The procurement cost represents the cost of the instruments and associated peripherals and software.

[P40A / TS-4575/FDM Calibrator]: M2600, TS-4575/FDM Calibrator: This system will be used to calibrate the IM-276/PD and IM-276A/PD Battlefield Dosimeters. In 2021, two new units will be procured. In 2022, the unit procured in 2019 as an RDT&E article for testing and further development of the device will be back-fitted as necessary in order to convert it into an updated, operational unit. The calibrators will be fielded to a Navy RCL on each coast, and the third to the Pearl Harbor RCL.

[P40A / TS-4575/FDM Parts & Training]: M2600, TS-4575/FDM Parts & Training: Initial spare parts, equipment, and training of RADIAC calibration technicians at the seven Navy RCLs on its operation and preventive maintenance.

[P40A / M2600 NWCF Contract Service Fee]: M2600 NWCF Contract Service Fee: The contract officer for hardware acquisitions is a Navy Working Capital Fund (NWCF)activity that charges a set fee for each contract award and modification. The applicable fee(s) for a given year are applied to the total value of the Cost Code hardware acquisitions.

[P40A / M2830 - Support - Production Engineering]: M2830, Production Engineering: Labor cost of the government and contractor personnel who prepare the acquisitions.

[P40A / Production Engineering Carderock]: M2830, Production Engineering: Labor cost of the government Engineers, Health Physicists, Scientists and others who prepare the acquisitions.

[P40A / Production Engineering ISEA]: M2830, Production Engineering In Service Engineering Agent (ISEA): Labor cost of the contractor Engineers, Logisticians, Technical Writer, Program Analyst, and Systems Analysts who help prepare the acquisitions.

[P40A / M2830 NWCF Contract Service Fee]: M2830 NWCF Contract Service Fee: The contract officer for service contracts is a Navy Working Capital Fund (NWCF)activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the contract action.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2920 / RADIAC	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0708017N	**Other Related Program Elements:** 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	RADIAC	P-5a			- / 62.145	- / 8.175	- / 6.450	- / 10.335	- / -	- / 10.335
P-40	**Total Gross/Weapon System Cost**				**- / 62.145**	**- / 8.175**	**- / 6.450**	**- / 10.335**	**- / 0.000**	**- / 10.335**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
Title 10 of the Code of Federal Regulations, Part 20 (10 CFR 20) requires RADIAC instruments be used to ensure the safety of personnel who work with or who are exposed to radioactive materials in their work. Additionally, the Navy's mission requires personnel and ships to have the ability to operate in radiological environments and the ability to identify and interdict radiological Weapons of Mass Destruction (WMD). Navy programs that require RADIAC instruments for Occupational Safety & Health (OSH) reasons under the provisions of 10 CFR 20 include Naval Nuclear Propulsion, Nuclear Weapons, Medical, and Radiological Affairs Support. Non-OSH programs include Radiological Defense, Consequence Management, Training, Technical (RADIAC calibration, shielding evaluation, research) and Radiological Search (maritime interdiction to locate or intercept WMD).

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2920 / RADIAC	Aggregated Items Title: RADIAC

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) M2100 - Survey Meters																				
1.1) Radiological Detection System (1)(†)	B		-	-	-	-	-	-	2,375.95	500	1.188	1,723.31	600	1.034	-	-	-	1,723.31	600	1.034
Subtotal: 1) M2100 - Survey Meters			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***1.188***	**-**	**-**	***1.034***	**-**	**-**	**-**	**-**	**-**	***1.034***
2) M2200 - Dosimetry																				
2.1) DT-702 Card Holder	A		19.03	60,000	1.142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Extremity Dosimeter (2)(†)	A		12.57	21,000	0.264	-	-	-	-	-	-	14.75	9,000	0.133	-	-	-	14.75	9,000	0.133
2.3) Accident Dosimeter (3)(†)	A		-	-	-	-	-	-	100.00	500	0.050	100.00	500	0.050	-	-	-	100.00	500	0.050
2.4) Accident Dosimeter High Purity Germanium Detector(†)	A		-	-	-	-	-	-	100,000.00	1	0.100	-	-	-	-	-	-	-	-	-
2.5) Accident Dosimeter Alpha/Beta Detector(†)	A		-	-	-	-	-	-	20,000.00	1	0.020	-	-	-	-	-	-	-	-	-
2.6) Accident Dosimeter Data & Training	A		-	-	-	-	-	-	-	-	0.220	-	-	-	-	-	-	-	-	-
2.7) Battlefield Dosimeter (4)(†)	A		252.63	33,567	8.480	227.25	14,488	3.292	227.25	5,045	1.146	227.25	8,900	2.023	-	-	-	227.25	8,900	2.023
2.8) Battlefield Dosimeter Cases (5)(†)	A		401.92	520	0.209	389.53	172	0.067	403.51	114	0.046	419.05	105	0.044	-	-	-	419.05	105	0.044
2.9) Electronic Personal Dosimeter (6)(†)	A		281.00	18,338	5.153	-	-	-	536.00	700	0.375	-	-	-	-	-	-	-	-	-
2.10) M2200 NWCF Contract Service Fee (7)	A		-	-	0.758	-	-	0.193	-	-	0.186	-	-	0.165	-	-	-	-	-	0.165
Subtotal: 2) M2200 - Dosimetry			**-**	**-**	***16.006***	**-**	**-**	***3.552***	**-**	**-**	***2.143***	**-**	**-**	***2.415***	**-**	**-**	**-**	**-**	**-**	***2.415***
3) M2400 - Other RADIAC																				
3.1) Spares	A		-	-	7.179	-	-	0.015	-	-	0.252	-	-	0.050	-	-	-	-	-	0.050
Subtotal: 3) M2400 - Other RADIAC			**-**	**-**	***7.179***	**-**	**-**	***0.015***	**-**	**-**	***0.252***	**-**	**-**	***0.050***	**-**	**-**	**-**	**-**	**-**	***0.050***
4) M2500 - Air Sampling Systems																				
4.1) Air Particle Detector (APD) Ship Frames (8)(†)	A		5,779.31	290	1.676	-	-	-	7,502.00	50	0.375	7,652.00	50	0.383	-	-	-	7,652.00	50	0.383
4.2) APD Ship (9)(†)	A		45,918.92	74	3.398	44,571.31	26	1.159	42,810.04	15	0.642	37,382.67	80	2.991	-	-	-	37,382.67	80	2.991

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2920 / RADIAC	Aggregated Items Title: RADIAC

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
4.3) APD Ship Conversion(†)	A		-	-	-	-	-	-	-	-	-	30,790.00	10	0.308	-	-	-	30,790.00	10	0.308
4.4) APD Ship Data (10)	A		-	-	2.160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) APD Ship Provisioning	A		-	-	0.374	-	-	0.745	-	-	-	-	-	-	-	-	-	-	-	-
4.9) Air Particle Sampler(†)	A		-	-	1.091	1,319.59	367	0.484	-	-	-	-	-	-	-	-	-	-	-	-
4.10) Tritium Monitor(†)	A		15,466.67	150	2.320	17,894.00	50	0.895	-	-	-	-	-	-	-	-	-	-	-	-
4.11) Tritium Monitor Testing, Data, Parts & Training	A		-	-	0.076	-	-	0.080	-	-	-	-	-	-	-	-	-	-	-	-
4.12) M2500 NWCF Contract Service Fee (11)	A		-	-	1.077	-	-	0.227	-	-	0.202	-	-	0.151	-	-	-	-	-	0.151
Subtotal: 4) M2500 - Air Sampling Systems			**-**	**-**	***12.172***	**-**	**-**	***3.590***	**-**	**-**	***1.219***	**-**	**-**	***3.833***	**-**	**-**	**-**	**-**	**-**	***3.833***
5) M2600 - Laboratory Test Equipment																				
5.1) Calibrators (12)(†)	A		-	-	-	-	-	-	-	-	-	306,000.00	3	0.918	-	-	-	306,000.00	3	0.918
5.2) Calibrator, No Source (13)(†)	A		-	-	-	-	-	-	200,000.00	1	0.200	-	-	-	-	-	-	-	-	-
5.3) Calibrator Initial Spare Parts, Installation & Training (14)	A		-	-	-	-	-	-	-	-	0.290	-	-	0.211	-	-	-	-	-	0.211
5.4) Liquid Scintillation Counter (15)(†)	A		-	-	-	-	-	-	-	-	-	80,400.00	2	0.161	-	-	-	80,400.00	2	0.161
5.5) TS-4575/FDM Calibrator (16)(†)	A		-	-	-	-	-	-	-	-	-	203,625.00	2	0.407	-	-	-	203,625.00	2	0.407
5.6) TS-4575/FDM Parts & Training	A		-	-	-	-	-	-	-	-	-	-	-	0.022	-	-	-	-	-	0.022
5.7) M2600 NWCF Contract Service Fee (17)	A		-	-	-	-	-	-	-	-	0.061	-	-	0.165	-	-	-	-	-	0.165
Subtotal: 5) M2600 - Laboratory Test Equipment			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***0.551***	**-**	**-**	***1.884***	**-**	**-**	**-**	**-**	**-**	***1.884***
6) M2830 - Support - Production Engineering																				
6.1) Production Engineering Carderock (18)	A		-	-	15.481	-	-	0.600	-	-	0.671	-	-	0.684	-	-	-	-	-	0.684

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2920 / RADIAC	Aggregated Items Title: RADIAC

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
6.2) Production Engineering ISEA	A		-	-	11.307	-	-	0.400	-	-	0.408	-	-	0.416	-	-	-	-	-	0.416
6.3) M2830 NWCF Contract Service Fee (19)	A		-	-	-	-	-	0.018	-	-	0.018	-	-	0.019	-	-	-	-	-	0.019
Subtotal: 6) M2830 - Support - Production Engineering			**-**	**-**	***26.788***	**-**	**-**	***1.018***	**-**	**-**	***1.097***	**-**	**-**	***1.119***	**-**	**-**	**-**	**-**	**-**	***1.119***
Total			**-**	**-**	**62.145**	**-**	**-**	**8.175**	**-**	**-**	**6.450**	**-**	**-**	**10.335**	**-**	**-**	**-**	**-**	**-**	**10.335**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) M2100, Radiological Detection System (RDS): This procurement will involve 17 different line items, ranging in cost from $34 for a power cord to $4,546 for a Control Unit plus Neutron Probe, which is just one of eight configurations in which a Control Unit will be bought with a different type of probe (Alpha, Beta, Neutron, Photon, Scintillation, and Field Instrument for the Detection of Low Energy Radiation (FIDLER)). Quantities required for each of the line items will also vary widely, from five Scintillation Probes to approximately 9,681 Control Units. To keep this exhibit simple, the quantities provided in each year will be a combination of several of the line items in various configurations. This also means that the unit cost year-to-year is not based on inflation of any specific end item, but rather a reflection of the various line items being procured that year in their various quantities and widely varying costs. Quantity increases have been achieved in this budget due to realignment of $7.9M in FYs 2022-2025 from the APD Ship cost element (M2500) due to the latter's new (awarded September 2019) contract pricing that came in much lower than previously estimated unit costs.

(2) M2200, Extremity Dosimeter: Additional resupply of dosimeters are periodically required to replace fielded equipment that is damaged, lost or worn out from normal use.

(3) M2200, Accident Dosimeter: The current DT-518/PD has been found to be in degraded condition in both the supply system and in deployed assets.

(4) M2200, Battlefield Dosimeter (BD): Subsequent to the Fukushima Daiichi nuclear plant incident in 2011, a capability gap was identified wherein ships in the deployed Battle Group were exposed to the lower levels of radiation normally associated with occupational radiological workers. To fill the gap, specifications for a new BD included dose received at occupational levels and real-time feedback for the wearer's situational awareness. Due to recent adjustments in the quantities needed as spares and in reserve, the procurement objective has been reduced from 75,000 units to 62,000, which will be achieved in 2021. The quantities previously shown in 2020 and 2021 have been reduced to accommodate the objective.

(5) M2200, Battlefield Dosimeter Cases. The unit price of the cases will vary with their size. Since all three configurations are consolidated into one Cost Element and will be purchased in varying quantities in each year, the Total Cost year-to-year will not conform to inflation indices.

(6) M2200, Electronic Personal Dosimeter (EPD): The vendor apportioned the final production run of their Mk2 EPD between the Navy, U.S. Air Force, and other customers. The Navy had been allotted and subsequently budgeted for 5,000 units. However, during the production run so many units failed testing and because spare parts were unavailable and the vendor not willing to procure additional parts, the Navy's allotment was reduced by the vendor to 700 units. Therefore the procurement of 1,000 in 2020 has been reduced accordingly and the planned procurements in 2021 and 2022 for 2,000 units in each year have been removed from the budget and the available $2.5M realigned into the Radiological Detection System line item.

(7) M2200 NWCF Contract Service Fee: In FY19, three separate fees were applied to the total value of each contract action. The Service Cost Center fee was 5.1%. Added to that were the Supply Management Cost Center fee of 9.2% capped at $12K, and the Purchase Request Line Item Service Cost Center fee of 8.9% capped at $2.5K. This fee structure and rates are applied to each fiscal year in the exhibit, although the rates and/or structure are subject to annual changes.

(8) M2500, Air Particle Detector (APD) Ship, Frames: Work is accomplished in accordance with MIL-STD-2110(EC), Restoration, Overhaul and Repair of Electronic Equipment.

(9) M2500, Air Particle Detector (APD), Ship: A new, competitive, build-to-print contract for the IM-272A/WDQ was awarded in September 2019. The unit cost came in significantly lower than the pricing previously being used to project cost. This contract also contained six levels of stepladder pricing from 25 to a maximum of 80 units per CLIN. Both outcomes provided the ability to allow procurement to complete within the term of the new contract in 2023, thereby regaining the original procurement schedule after a two-year production hiatus for an engineering change request to accommodate COLUMBIA class submarine noise reduction requirements, and technical issues with a supplier of pumps for the unit. FY18 and FY19 fuds were used to make the award in September 2019, so the prior year and FY19 quantities were adjusted accordingly. The procurement objective of 338 units is unchanged, but the OPN objective has been reduced to 301 units because 27 are projected to be procured with SCN.

(10) M2500, Air Particle Detector, Ship Data: With the new contract scheduled to be awarded in September 2019, a contract line item will be included for the contractor to provide updated manuals.

(11) M2500 NWCF Contract Service Fee: In FY19, three separate fees were applied to the total value of each contract action. The Service Cost Center fee was 5.1%. Added to that were the Supply Management Cost Center fee of 9.2% capped at $12K, and the Purchase Request Line Item Service Cost Center fee of 8.9% capped at $2.5K. This fee structure and rates are applied to each fiscal year in the exhibit, although the rates and/or structure are subject to annual changes.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2920 / RADIAC	**Aggregated Items Title:** RADIAC

(12) M2600, Calibrators: The current suite of AN/UDM-1B calibrators is over 30 years old, and the natural decay of the strength of the radioactive source over time restricts calibration effectiveness by limiting the scale of calibration points below American National Standards Institute (ANSI) requirements that are followed in accordance with Navy policy. Also, due to the age of the calibrators, there are several parts no longer supported by the manufacturer, and a malfunctioning calibrator (e.g., where the radioactive source gets stuck in the exposed position) poses a very high safety risk.

(13) M2600, Calibrator, No Source: One calibrator will be procured without a radioactive source in order that it can be placed in an area without radiological controls. It will be used for trouble shooting when problems with fielded units are reported to the responsible engineers, and also for training purposes.

(14) M2600, Calibrator Initial Spare Parts, Installation & Training: Calibrators must be installed at each of the seven RADIAC Calibration Laboratories (RCL) by specially trained and licensed personnel. Initial spares will be procured, and the vendor will provide instruction to RCL technicians who will be operating the equipment.

(15) M2600, Liquid Scintillation Counter: The Liquid Scintillation Counter (LSC) is a laboratory device designed to measure low levels of radioactivity. Radiological monitoring requirements for the Strategic Systems Program (SSP) enterprise are driven by mission work conducted at Strategic Weapons Facility, Atlantic (SWFLANT) and Strategic Weapons Facility, Pacific (SWFPAC). In these facilities, proximity to nuclear weapons presents potential occupational exposure to ionizing radiation.

(16) M2600, TS-4575/FDM Calibrator: This is an irradiator designed specifically to verify specification compliance and calibration of the IM-276/PD and IM-276A/PD Battlefield Dosimeter. The dosimeter must be checked and calibrated every three years in order to ensure it is operating within specifications. Because there will be over 58,000 dosimeters fielded, a device that can service them efficiently is needed in order to ensure the throughput at the servicing RADIAC Calibration Laboratory (RCL) can keep up with the operational tempo, and to reduce total ownership costs by automating the entire process and therefore reducing labor costs. This device will be able to process 200 units per eight hour shift, as opposed to a manual process that would involve irradiating at most 30 units at a time, but then requiring a technician to hook up each unit individually to a computer for verification and other testing, which would equate to a throughput of at most two batches (60 units) during the same eight hour work shift, and more likely only one batch of 30 completed and half the process completed for the second batch.

(17) M2600 NWCF Contract Service Fee: In FY19, three separate fees were applied to the total value of each contract action. The Service Cost Center fee was 5.1%. Added to that were the Supply Management Cost Center fee of 9.2% capped at $12K, and the Purchase Request Line Item Service Cost Center fee of 8.9% capped at $2.5K. This fee structure and rates are applied to each fiscal year in the exhibit, although the rates and/or structure are subject to annual changes.

(18) Two full-time equivalent personnel will be added in 2020, one nuclear engineer and one engineer.

(19) M2830 NWCF Contract Service Fee: In FY19, the servicing contracting activity charged a Purchase Request Line Item Service Cost Center fee of 4.5% of the contract action. Although the rate is subject to annual change, it is applied to each year in this exhibit.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2920 / RADIAC	Aggregated Items: RADIAC

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) M2100 - Survey Meters												
1.1) Radiological Detection System (1)		2020 (20)	VPI Technology Group / Draper, UT	C / CPIF	Aberdeen Proving Grounds, MD	Jun 2020	Mar 2021	500	2,375.95	Y		Jan 2016
1.1) Radiological Detection System (1)		2021	VPI Technology Group / Draper, UT	C / CPIF	Aberdeen Proving Grounds, MD	Jun 2021	Mar 2022	600	1,723.31	Y		Jan 2016
2) M2200 - Dosimetry												
2.2) Extremity Dosimeter (2)		2021	Thermo Fisher Scientific / Bedford, MA	SS / FFP	NSWC Carderock	Mar 2021	Jun 2021	9,000	14.75	Y		Oct 2020
2.3) Accident Dosimeter (3)		2020	TBD / TBD	C / FFP	NSWC Carderock	Sep 2020	Mar 2021	500	100.00	N	Nov 2019	Mar 2020
2.3) Accident Dosimeter (3)		2021	TBD / TBD	C / FFP	NSWC Carderock	Oct 2020	Apr 2021	500	100.00	N	Nov 2019	Mar 2020
2.4) Accident Dosimeter High Purity Germanium Detector		2020	TBD / TBD	C / FFP	NSWC Carderock	Sep 2020	Mar 2021	1	100,000.00	N	Nov 2019	Mar 2020
2.5) Accident Dosimeter Alpha/Beta Detector		2020	TBD / TBD	C / TBD	NSWC Carderock	Sep 2020	Mar 2021	1	20,000.00	N	Nov 2019	Mar 2020
2.7) Battlefield Dosimeter (4)		2019	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2019	Dec 2019	14,488	227.25	Y		May 2017
2.7) Battlefield Dosimeter (4)		2020	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2020	Sep 2020	5,045	227.25	Y		May 2017
2.7) Battlefield Dosimeter (4)		2021	Radiation Safety & Control Services / Stratham, NH	SS / IDDQ	NSWC Carderock	Mar 2021	Dec 2021	8,900	227.25	Y		May 2017
2.8) Battlefield Dosimeter Cases (5)		2019	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2019	Mar 2019	172	389.53	Y		May 2017
2.8) Battlefield Dosimeter Cases (5)		2020	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2020	Sep 2020	114	403.51	Y		May 2017
2.8) Battlefield Dosimeter Cases (5)		2021	Radiation Safety & Control Services / Stratham, NH	SS / IDDQ	NSWC Carderock	Mar 2021	Dec 2021	105	419.05	Y		May 2017
2.9) Electronic Personal Dosimeter (6)		2020	Thermo Fisher Scientific / Franklin, MA	SS / IDIQ	NSWC Carderock	Mar 2020	May 2020	700	536.00	Y		Mar 2018
4) M2500 - Air Sampling Systems												
4.1) Air Particle Detector (APD) Ship Frames (8)		2020	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Nov 2019	Feb 2020	50	7,502.00	Y		
4.1) Air Particle Detector (APD) Ship Frames (8)		2021	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Nov 2020	Feb 2021	50	7,652.00	Y		
4.2) APD Ship (9)		2019	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Sep 2019	Mar 2020	26	44,571.31	Y		Jun 2019
4.2) APD Ship (9)		2020	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Mar 2020	Sep 2020	15	42,810.04	Y		Jun 2019
4.2) APD Ship (9)		2021	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Mar 2021	Sep 2021	80	37,382.67	Y		Jun 2019

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2920 / RADIAC	Aggregated Items: RADIAC

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.3) APD Ship Conversion		2021	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Mar 2021	Sep 2022	10	30,790.00	Y		Jun 2019
4.9) Air Particle Sampler		2019	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Jul 2019	Jun 2020	367	1,319.59	Y		Jun 2014
4.10) Tritium Monitor		2019	Atlantic Nuclear / Rockland, MA	C / FFP	NSWC Carderock	Mar 2019	Dec 2019	50	17,894.00	Y		Jun 2017
5) M2600 - Laboratory Test Equipment												
5.1) Calibrators [12]		2021	TBD / TBD	C / FFP	NSWC Carderock	Oct 2020	May 2021	3	306,000.00	Y		Oct 2019
5.2) Calibrator, No Source [13]		2020	TBD / TBD	C / FFP	NSWC Carderock	Jan 2020	Aug 2020	1	200,000.00	Y		Oct 2019
5.4) Liquid Scintillation Counter [15]		2021	TBD / TBD	C / FFP	NSWC Carderock	Mar 2021	Jun 2021	2	80,400.00	N	Dec 2020	Dec 2020
5.5) TS-4575/FDM Calibrator [16]		2021	Hopewell Designs, Inc. / Augusta, GA	SS / FFP	NSWC Carderock	Mar 2021	Mar 2021	2	203,625.00	N	Apr 2020	Dec 2018

Footnotes:

[20] This contract is being managed by the Joint Project Manager, Radiological & Nuclear Defense, from which the Army, Navy, Marine Corps and Air Force will order equipment.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2925 / CANES Intell

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303138N

Line Item MDAP/MAIS Code: M417

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	365.105	53.465	52.713	48.654	0.000	48.654	53.553	48.702	49.722	50.722	392.576	1,115.212
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	365.105	53.465	52.713	48.654	0.000	48.654	53.553	48.702	49.722	50.722	392.576	1,115.212
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**365.105**	**53.465**	**52.713**	**48.654**	**0.000**	**48.654**	**53.553**	**48.702**	**49.722**	**50.722**	**392.576**	**1,115.212**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	0.400	-	0.123	0.237	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Consolidated Afloat Networks and Enterprise Services (CANES) is the Navy's Program of Record (POR) to replace and modernize existing afloat networks with a cyber-hardened, warfighting resilient hardware, software and enterprise services infrastructure to enable information warfare from and within the tactical domain to expand the Fleets digital competitive advantage. CANES provides complete network infrastructure including hardware, software, processing, storage, and end user devices for the Unclassified, Coalition, Secret and Sensitive Compartmented Information (SCI) enclaves to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aegis Ashore sites. CANES services include application hosting, data transport and storage, system management, cyber security, email, web, chat, collaboration, and voice and video services. CANES is designed using commercial sector industry best practices of reducing the number of separate Fleet networks and drive affordability with a single engineered technical solution across the Fleet from patrol craft to aircraft carriers. As much as possible, CANES relies on Commercial Off-The-Shelf (COTS) hardware and software to reduce development time and cost, and leverages commercial Information Technology (IT) approaches to include Development, Security, and Operations (DevSecOps) to drive rapid upgrades. It allows for streamlined acquisition, contracting, sustainment, and significant lifecycle efficiencies through consolidation of multiple configuration management baselines, logistics, and training efforts into a single unified support structure.

The CANES Application Integration effort provides common software governance, testing, processes, and tools to application developers, and conducts integration testing to confirm compatibility for hosted applications prior to fielding. More than eighty (80) hosted software applications and systems - including Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics, and Business domains - require the CANES infrastructure to operate in the tactical environment. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), no longer provide their own independent network hardware and now depend on CANES to field, host, and sustain their capabilities. CANES also provides a set of capabilities called Agile Core Services (ACS) which brings advanced data science capabilities and other common network services to allow hosted application developers to focus on the unique capabilities they provide.

CANES is funded and programmed to field regular technical updates in order to keep pace with rapidly evolving cyber security threats and meet emerging operational demands. CANES uses a DevSecOps framework to improve its engineering processes and speed the deployment of new cyber security, application hosting and technical updates. Future CANES systems will incorporate technologies such as Cloud computing, Machine learning, and Artificial Intelligence.

CANES is a mature program with an innovative Multi Award Contract (MAC) in place that has consistently proven capable of delivering on or ahead of schedule. Additionally, the program uses a robust Continuous Process Improvement (CPI) program to improve the delivery speed and quality of network capabilities to the Fleet.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2925 / CANES Intell

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303138N

Line Item MDAP/MAIS Code: M417

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / CANES Intell	P-5a			- / 5.712	- / 2.771	- / 3.658	- / 1.811	- / 0.000	- / 1.811
P-3a	1 / CANES-Afloat 5G010/5G777 MIP (TBD)				- / 359.393	- / 50.694	- / 49.055	- / 46.843	- / 0.000	- / 46.843
P-40	**Total Gross/Weapon System Cost**				**- / 365.105**	**- / 53.465**	**- / 52.713**	**- / 48.654**	**- / 0.000**	**- / 48.654**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / CANES Intell	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CANES-Afloat 5G010/5G777 MIP (TBD)				- / 53.235	- / 47.846	- / 46.602	- / 48.657	- / 378.762	- / 1,081.087
P-40	**Total Gross/Weapon System Cost**				**- / 53.553**	**- / 48.702**	**- / 49.722**	**- / 50.722**	**- / 392.576**	**- / 1,115.212**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The FY21 decrease in the Consolidated Afloat Networks and Enterprise Services (CANES) funding profile aligns CANES with available ship modernization windows and the program's capacity to procure and install the product. This ensures CANES is deployed to the Fleet as quickly as possible to mitigate cyber security threats, keep pace with increased computing requirements for hosted applications, and support Department of Defense (DoD) directives to remove End of Life (EOL) Windows Operating Systems software from the Fleet as quickly as feasible. Obsolete Commercial Off-The-Shelf (COTS) legacy hardware and the termination of cyber security support for legacy versions of COTS software products (Microsoft, RedHat, Linux) drive increased sustainment costs, reduce operational availability and create critical cyber security vulnerabilities in Navy Tactical Networks. Replacing these legacy networks and modernizing the tactical environment with CANES is the cornerstone for all Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) investments.

CANES receives additional funds in FY21 to begin adding Military Sealift Command (MSC) ships to the program's Target Inventory Objective (TIO).

FY 2021 - CANES funds are for the procurement of (20) Afloat production units (0 Force Level, 11 Unit Level, 6 Subs, 3 MSC) and (13) Technical Insertion units (3 Force Level, 6 Unit Level, 4 Subs), with integration and associated costs for pre-installation design and the installation of (18) Afloat production units and (18) Technical Insertion units. CANES funds will also be used for the procurement of (1) MSC First Article and the installation of (5) Ashore units.
It is important to note that procurement quantities across the Future Year Defense Program (FYDP) are the same CANES end item products referenced in CANES LI 2915. Installation quantities represent sites receiving CANES are also referenced in LI 2915. The associated dollars in this exhibit represent the Intell investment in the CANES system.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2925 / CANES Intell	Item Number / Title [DODIC]: 1 / CANES Intell
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	5.712	2.771	3.658	1.811	0.000	1.811
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	5.712	2.771	3.658	1.811	0.000	1.811
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**5.712**	**2.771**	**3.658**	**1.811**	**0.000**	**1.811**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - CANES Intell Procurement Cost																		
Recurring Cost																		
1.1.1) CANES-Ashore Production Units MIP(†) (1)	276.000	3	0.828	541.000	3	1.623	566.600	5	2.833	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) CANES - Ashore Technical Insertion - MIP(†) (2)	-	-	0.000	278.000	2	0.556	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) Consolidated Prior Year Requirements (3)	4,314.000	1	4.314	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*5.142*	-	-	*2.179*	-	-	*2.833*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - CANES Intell Procurement Cost	**-**	**-**	***5.142***	**-**	**-**	***2.179***	**-**	**-**	***2.833***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - CANES Intell Installations Cost																		
Recurring Cost																		
2.1.1) CANES - Ashore Technical Insertion Install - MIP (4)	-	-	0.000	-	-	0.144	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) CANES - Ashore Production Units Install - MIP (5)	-	-	0.527	-	-	0.317	-	-	0.641	-	-	1.724	-	-	0.000	-	-	1.724
Subtotal: Recurring Cost	-	-	*0.527*	-	-	*0.461*	-	-	*0.641*	-	-	*1.724*	-	-	*0.000*	-	-	*1.724*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2925 / CANES Intell	Item Number / Title [DODIC]: 1 / CANES Intell
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - CANES Intell Installations Cost	**-**	**-**	***0.527***	**-**	**-**	***0.461***	**-**	**-**	***0.641***	**-**	**-**	***1.724***	**-**	**-**	***0.000***	**-**	**-**	***1.724***
Support - CANES Intell Support Cost																		
3.1) CANES - Ashore Production Support (MIP)	-	-	0.043	-	-	0.104	-	-	0.129	-	-	0.000	-	-	0.000	-	-	0.000
3.2) CANES - Ashore Design Service Agent (MIP)	-	-	0.000	-	-	0.027	-	-	0.055	-	-	0.087	-	-	0.000	-	-	0.087
Subtotal: Support - CANES Intell Support Cost	**-**	**-**	***0.043***	**-**	**-**	***0.131***	**-**	**-**	***0.184***	**-**	**-**	***0.087***	**-**	**-**	***0.000***	**-**	**-**	***0.087***
Gross/Weapon System Cost	**-**	**-**	**5.712**	**-**	**-**	**2.771**	**-**	**-**	**3.658**	**-**	**-**	**1.811**	**-**	**-**	**0.000**	**-**	**-**	**1.811**

Remarks:

[Hardware/Recurring] Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (3), FY21-FY25 (0); Maritime Operation Center (MOC)(including Aegis Ashore) - PY (0); FY19 (3), FY20 (3), FY21-25(0).

- A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note.

-TTE has no associated DSA requirements.

(†) indicates the presence of a P-5a

Footnotes:

(1) Production Lead Time is 8 months for First Articles. First Articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. CANES First Articles are not installed. All following articles of the same variant require a Production Lead Time of 6 months. Total Lead time, including 1 month Admin lead time and 5 months for integration, assembly and testing, is 12 months. First Article average unit cost fluctuations are attributable to variances in system configuration requirements among shore sites. A shore training unit (TTE) has fewer users and runs fewer applications than a shore Maritime Operations Center (MOC). MOCs are larger in scale compared to the shore training sites and represent a super set of users, applications and connected systems.

(2) Tech Insertion procurements in FY19, FY22, and FY23 are TTE units. All other tech insertion procurements are Maritime Operation Centers (MOC). TTE units do not require DSA prior to installation.

(3) Consolidated Prior Year requirements consists of Cooperative Maritime Forces Pacific (CMFP).

(4) Ashore Technical Insertion Installation Quantities are as follows: Technical Training Equipment (TTE): FY19 (2), FY20 (0), FY21 (0).

(5) Ashore Production Unit Installation quantities are as follows: Maritime Operations Center (MOC): FY19 (1), FY20 (2), FY21 (3)

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2925 / CANES Intell	Item Number / Title [DODIC]: 1 / CANES Intell

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) CANES-Ashore Production Units MIP		2019 (6)	VARIOUS / Various	C / CPFF	San Diego	Dec 2018	Jun 2019	3	541.000	Y		Oct 2018
1.1.1) CANES-Ashore Production Units MIP		2020	VARIOUS / Various	C / CPFF	San Diego	Nov 2019	May 2020	5	566.600	N	Nov 2019	Oct 2019
1.1.2) CANES - Ashore Technical Insertion - MIP		2019	Various / Various	C / CPFF	San Diego	Dec 2018	Jun 2019	2	278.000	Y		Oct 2018

Footnotes:

(6) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2925 / CANES Intell	**Modification Number / Title:** 1 / CANES-Afloat 5G010/5G777 MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	359.393	50.694	49.055	46.843	0.000	46.843	53.235	47.846	46.602	48.657	378.762	1,081.087
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	359.393	50.694	49.055	46.843	0.000	46.843	53.235	47.846	46.602	48.657	378.762	1,081.087
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**359.393**	**50.694**	**49.055**	**46.843**	**0.000**	**46.843**	**53.235**	**47.846**	**46.602**	**48.657**	**378.762**	**1,081.087**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The consolidation of existing Afloat Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and Agile Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services. Migration of Non-Classified Enclave (NCE) capabilities into the CANES baseline.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2925 / CANES Intell	**Modification Number / Title:** 1 / CANES-Afloat 5G010/5G777 MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) MIP	**Modification Type:** TBD	**Related RDT&E PEs:** 0303238N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CANES-Afloat 5G010/5G777 MIP												
B Kits												
Recurring												
1.1.1) CANES - Afloat Production Units - MIP - NonOrganic (7)	106 / 170.766	14 / 11.049	18 / 14.893	20 / 15.759	- / -	20 / 15.759	14 / 11.385	10 / 7.884	- / -	- / -	- / -	182 / 231.736
1.1.2) CANES Afloat Technical Insertion - MIP - NonOrganic (8)	23 / 15.152	22 / 16.726	18 / 14.339	13 / 9.818	- / -	13 / 9.818	27 / 20.911	26 / 20.751	40 / 29.886	45 / 33.507	288 / 216.694	502 / 377.784
Subtotal: Recurring	*- / 185.918*	*- / 27.775*	*- / 29.232*	*- / 25.577*	*- / -*	*- / 25.577*	*- / 32.296*	*- / 28.635*	*- / 29.886*	*- / 33.507*	*- / 216.694*	*- / 609.520*
Non-Recurring												
1.2.1) CANES - Afloat First Articles - MIP - Organic (9)	12 / 36.245	1 / 0.625	- / -	1 / 0.449	- / -	1 / 0.449	- / -	- / -	- / -	- / -	- / -	14 / 37.319
1.2.2) CANES-Non-Recurring Engineering (MIP) - Organic	- / 4.732	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.732
Subtotal: Non-Recurring	*- / 40.977*	*- / 0.625*	*- / -*	*- / 0.449*	*- / -*	*- / 0.449*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 42.051*
Subtotal: CANES-Afloat 5G010/5G777 MIP	*141 / 226.895*	*37 / 28.400*	*36 / 29.232*	*34 / 26.026*	*- / -*	*34 / 26.026*	*41 / 32.296*	*36 / 28.635*	*40 / 29.886*	*45 / 33.507*	*288 / 216.694*	*698 / 651.571*
Subtotal: Procurement, All Modification Items	*- / 226.895*	*- / 28.400*	*- / 29.232*	*- / 26.026*	*- / -*	*- / 26.026*	*- / 32.296*	*- / 28.635*	*- / 29.886*	*- / 33.507*	*- / 216.694*	*- / 651.571*
Support *(All Modification Items)*												
2.1) CANES - Afloat Production Support (MIP)	- / 9.696	- / 1.303	- / 1.376	- / 1.159	- / 0.000	- / 1.159	- / 1.293	- / 1.335	- / 1.321	- / 1.621	- / 10.342	- / 29.446
2.2) CANES - Afloat Design Service Agent (MIP)	- / 15.046	- / 0.862	- / 1.197	- / 1.015	- / 0.000	- / 1.015	- / 1.033	- / 1.219	- / 2.345	- / 2.378	- / 8.643	- / 33.738
Subtotal: Support	*- / 24.742*	*- / 2.165*	*- / 2.573*	*- / 2.174*	*- / -*	*- / 2.174*	*- / 2.326*	*- / 2.554*	*- / 3.666*	*- / 3.999*	*- / 18.985*	*- / 63.184*
Installation												
Modification Item 1 of 1: CANES-Afloat 5G010/5G777 MIP	- / 107.756	- / 20.129	- / 17.250	- / 18.643	- / 0.000	- / 18.643	- / 18.613	- / 16.657	- / 13.050	- / 11.151	- / 143.083	- / 366.332
Subtotal: Installation	*- / 107.756*	*- / 20.129*	*- / 17.250*	*- / 18.643*	*- / -*	*- / 18.643*	*- / 18.613*	*- / 16.657*	*- / 13.050*	*- / 11.151*	*- / 143.083*	*- / 366.332*
Total												
Total Cost (Procurement + Support + Installation)	**359.393**	**50.694**	**49.055**	**46.843**	**0.000**	**46.843**	**53.235**	**47.846**	**46.602**	**48.657**	**378.762**	**1,081.087**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2925 / CANES Intell	**Modification Number / Title:** 1 / CANES-Afloat 5G010/5G777 MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CANES-Afloat 5G010/5G777 MIP

Manufacturer Information

Manufacturer Name: Multiple Vendors (CANES - Afloat Production Units - MIP) (10)	Manufacturer Location: Various
Administrative Leadtime *(in Months)*: 1	Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Nov 2020				
Delivery Dates	Jun 2019	Jun 2020	May 2021				

Manufacturer Name: Multiple Vendors (CANES Afloat Technical Insertion - MIP)	Manufacturer Location: Various
Administrative Leadtime *(in Months)*: 1	Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Nov 2020				
Delivery Dates	Jun 2019	Jun 2020	May 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Afloat Production Units - MIP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	86 / 101.388	20 / 16.136	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	106 / 117.524
FY 2019	- / -	2 / 1.455	12 / 10.617	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 12.072
FY 2020	- / -	- / -	- / -	18 / 13.648	0 / 0.000	18 / 13.648	- / -	- / -	- / -	- / -	0 / 0.000	18 / 13.648
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	20 / 14.985	- / -	- / -	- / -	0 / 0.000	20 / 14.985
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 9.697	- / -	- / -	0 / 0.000	14 / 9.697
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 6.401	- / -	0 / 0.000	10 / 6.401
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	86 / 101.388	22 / 17.591	12 / 10.617	18 / 13.648	0 / 0.000	18 / 13.648	20 / 14.985	14 / 9.697	10 / 6.401	- / -	0 / 0.000	182 / 174.327

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2925 / CANES Intell	**Modification Number / Title:** 1 / CANES-Afloat 5G010/5G777 MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CANES-Afloat 5G010/5G777 MIP

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Afloat Production Units - MIP

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	83	4	11	2	8	-	5	4	3	3	7	2	6	2	9	4	5	5	4	4	1	3	4	1	2	-	-	-	-	-	182
Out	82	1	4	11	2	8	-	5	4	3	3	7	2	6	2	9	4	5	5	4	4	1	3	4	1	2	-	-	-	-	182

Method of Implementation: [none specified]:: Installation Name: CANES Afloat Technical Insertion - MIP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	14 / 6.368	9 / 2.538	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	23 / 8.906
FY 2019	- / -	- / -	22 / 6.633	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	22 / 6.633
FY 2020	- / -	- / -	- / -	18 / 4.995	0 / 0.000	18 / 4.995	- / -	- / -	- / -	- / -	0 / 0.000	18 / 4.995
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	13 / 3.628	- / -	- / -	- / -	0 / 0.000	13 / 3.628
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	27 / 6.960	- / -	- / -	0 / 0.000	27 / 6.960
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	26 / 6.649	- / -	0 / 0.000	26 / 6.649
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	40 / 11.151	0 / 0.000	40 / 11.151
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	45 / 20.081	45 / 20.081
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	288 / 123.002	288 / 123.002
Total	14 / 6.368	9 / 2.538	22 / 6.633	18 / 4.995	0 / 0.000	18 / 4.995	13 / 3.628	27 / 6.960	26 / 6.649	40 / 11.151	333 / 143.083	502 / 192.005

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	14	2	2	1	4	5	4	10	3	2	5	6	5	2	2	4	5	5	11	3	8	7	7	4	8	11	14	7	8	333	502
Out	10	4	2	2	1	4	5	4	10	3	2	5	6	5	2	2	4	5	5	11	3	8	7	7	4	8	11	14	7	341	502

Method of Implementation (Organic): CANES - Afloat First Articles - MIP - Not Installed	**Installation Quantity:** 14

Footnotes:

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2925 / CANES Intell	**Modification Number / Title:** 1 / CANES-Afloat 5G010/5G777 MIP
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(7) The procurement average unit cost fluctuation is due to variance in system configuration requirements for each CANES platform type. - A CANES unit level platform (DDG/CG/LSD) requires a smaller system, supporting fewer users and applications than force level platforms (CVN/LHD/LHA/LCC) with a greater number of users and applications. For example, a CANES DDG design consists of 18 equipment racks and ~400 workstations, while a CANES CVN system consists of 51 equipment racks and ~3000 workstations. The average procurement cost (hardware, software, integration, and engineering support) for a unit level ship ranges from $5.2M to $7.5M, while the average procurement cost for a force level platform ranges from $11.8M to $15.6M, and submarine unit procurement costs range from $2.7M to $4.6M. These costs include both the MIP and non-MIP components of the CANES units. - CANES Afloat installations are performed at several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The Naval Information Warfare Command (NAVWAR) Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY21 - 25 CANES installation plan. - CANES Afloat production units require an additional 5 months after delivery for integration, assembly and testing prior to installation start. Installations do not begin until 11 months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months. - Installation cost fluctuations are attributed to and dependent on ship location, class, and variant of predecessor system the hull currently has installed. As an example of variant differences, if a CVN has an ISNS Delta variant installed, a CANES installation is estimated to be $18.2M. If that same CVN had a legacy Asynchronous Transfer Mode Local Area Network (ATM LAN) the CANES installation is estimated to be $22.4M. This cost difference is driven by a number of issues such as the requirement for new or additional wiring, equipment, and configuration changes.

(8) The decrease in tech insertion production unit cost from FY20 to FY21 is due to a lower percentage of more expensive Force Level units in FY21 compared to FY20. - CANES technical insertion installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The Naval Information Warfare (NAVWAR) Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY21 - 25 CANES installation plan. - CANES Afloat technical insertion units require an additional 5 months after delivery for operational integration, assembly and testing prior to installation start. Installations do not begin until 11months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months.

(9) First Article Procurement added in FY21 to support addition of Maritime Sealift Command (MSC) platforms to CANES Target Inventory Objective. First articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. CANES First Articles are not installed.

(10) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2940 / Gen Purp Elec Test Equip (GPETE)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	13,400.443	5.985	12.214	8.133	0.000	8.133	10.184	9.723	9.829	10.026	58.126	13,524.663
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	13,400.443	5.985	12.214	8.133	0.000	8.133	10.184	9.723	9.829	10.026	58.126	13,524.663
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**13,400.443**	**5.985**	**12.214**	**8.133**	**0.000**	**8.133**	**10.184**	**9.723**	**9.829**	**10.026**	**58.126**	**13,524.663**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides for the initial procurement and distribution of General Purpose Electronic Test Equipment (GPETE). GPETE funding is provided to execute a detailed, multi-year sustainment and modernization plan for
intermediate and organizational maintenance activities. GPETE is the equipment employed to ensure the accuracy of installation, alignment, and maintenance (preventative and routine) of all navy weapons systems ashore and afloat.
The GPETE procured must meet rigid technical requirements, be cost effective and satisfy valid deficiencies in authorized allowance. Within the Test, Measurement and Diagnostic Equipment (TMDE) Support Program, GPETE is classified under 4 functional groups: Fiber Optics (M6000), Signal Generators (M6001), Oscilloscopes and Meters (M6002), and Passive/Ancillary/Mechanical (M6004). The program also breaks out a fifth functional group (M6003)for non-equipment (i.e. labor) tasks including engineering, procurement and integrated logistics support. The TMDE program procures Commercial-off-the-Shelf (COTS; i.e. non-government manufactured test equipment that is available to the general public) GPETE to address the maintenance requirements across shipboard/shore- based activities and programs. Approximately 80% of the annual test equipment requirements are procured through the DOD Supply System, or MILSTRIP, process. When the GPETE program procures through MILSTRIP process, Defense Logistics Agency (DLA) or Naval Supply Weapons Support System (NAVSUP WSS) fills the requisition. The remaining 20% of procurements are Simplified Acquisition Purchase (SAP) contracts or Purchase card (P-card) buys. SAP and P-card requisitions are utilized only for obsolete test equipment that is no longer available for procurement through MILSTRIP. Any variance in unit costs and quantity across fiscal years is attributable to the diversity and varying complexity of the Commercial-off-the-Shelf GPETE. This property is procured from year to year to address the maintenance requirements across shipboard/shore-based activities and programs. The Navy's inventory of GPETE is approaching obsolescence and requires modernization to avoid deterioration in the accuracy of our weapons systems. Many models are no longer in production, so replacement equipment must be purchased from newer model inventory, some of which have a greater unit cost.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2940 / Gen Purp Elec Test Equip (GPETE)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Gen Purp Elec Test Equip (GPETE)	P-5a			- / 13,400.443	- / 5.985	- / 12.214	- / 8.133	- / -	- / 8.133
P-40	**Total Gross/Weapon System Cost**				**- / 13,400.443**	**- / 5.985**	**- / 12.214**	**- / 8.133**	**- / 0.000**	**- / 8.133**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
A portion of the cost growth from one fiscal year to the next within the material cost codes (M6000, M6001, M6003, M6004) is directly attributed to an average industry cost growth of approximately 2%. Additionally, while GPETE is grouped into four functional families, the types of test equipment within each cost code varies in complexity and capability and therefore cost. For example, within M6001, a tachometer has a unit cost of $434.12, where as a source generator under this same M6001 functional family has a unit cost of $17,053. Average unit cost growth within a cost code beyond 2% can also be attributed to planned procurement of larger quantities of more complex/capable GPETE and/or modernization to more complex/capable GPETE in future years.

Decrease from FY 2020 to FY 2021 is attributed to the decrease in quantities for M6004 Passive Ancillary and Mechanical Equipment, M6002 Meter and Counters Equipment Oscill SCPS, M6001 Signal Generator and Analyzers, and M6000 Fiber Optics and Data Communications Equipment.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2940 / Gen Purp Elec Test Equip (GPETE)	**Aggregated Items Title:** Gen Purp Elec Test Equip (GPETE)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) M6000 FIBER OPTICS																				
1.1) FIBER OPTICS AND DATA COMM(†)	A		10,837.12	264	2.861	6,639.61	32	0.212	6,635.59	118	0.783	6,720.93	43	0.289	-	-	-	6,720.93	43	0.289
Subtotal: 1) M6000 FIBER OPTICS			-	-	***2.861***	-	-	***0.212***	-	-	***0.783***	-	-	***0.289***	-	-	-	-	-	***0.289***
2) M6001 SIGNAL GENERATORS																				
2.1) SIGNAL GENERATORS & ANALYZERS(†)	A		10,447.76	871	9.100	12,476.42	52	0.649	12,483.61	122	1.523	12,750.00	88	1.122	-	-	-	12,750.00	88	1.122
Subtotal: 2) M6001 SIGNAL GENERATORS			-	-	***9.100***	-	-	***0.649***	-	-	***1.523***	-	-	***1.122***	-	-	-	-	-	***1.122***
3) M6002 OSCILLSCPS, METERS																				
3.1) OSCILLSCPS, METERS&COUNTERS(†)	A		5,841.81	7,023	41.027	3,381.35	865	2.925	3,381.62	1,795	6.070	3,447.53	1,153	3.975	-	-	-	3,447.53	1,153	3.975
Subtotal: 3) M6002 OSCILLSCPS, METERS			-	-	***41.027***	-	-	***2.925***	-	-	***6.070***	-	-	***3.975***	-	-	-	-	-	***3.975***
4) M6003 PROC ENGR AND DOCUMENTATION																				
4.1) PROC ENG AND DOCUMENTATION	A		-	-	9.695	-	-	0.691	-	-	0.661	-	-	0.699	-	-	-	-	-	0.699
Subtotal: 4) M6003 PROC ENGR AND DOCUMENTATION			-	-	***9.695***	-	-	***0.691***	-	-	***0.661***	-	-	***0.699***	-	-	-	-	-	***0.699***
5) M6004 PASSIVE ANCILLARY AND MECHANICAL																				
5.1) PASSIVE ANCILLARY AND MECHANICAL(†)	A		2,585K	5,159	13,337.760	1,673.28	901	1.508	1,672.99	1,899	3.177	1,706.67	1,200	2.048	-	-	-	1,706.67	1,200	2.048
Subtotal: 5) M6004 PASSIVE ANCILLARY AND MECHANICAL			-	-	***13,337.760***	-	-	***1.508***	-	-	***3.177***	-	-	***2.048***	-	-	-	-	-	***2.048***
Total			-	-	**13,400.443**	-	-	**5.985**	-	-	**12.214**	-	-	**8.133**	-	-	-	-	-	**8.133**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)	Aggregated Items: Gen Purp Elec Test Equip (GPETE)

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) M6000 FIBER OPTICS												
1.1) FIBER OPTICS AND DATA COMM		2012	NSWC/CHINA LAKE / CHINA LAKE	WR	SEAL BEACH	Nov 2011	Mar 2012	30	10,000.00	Y		
1.1) FIBER OPTICS AND DATA COMM		2013	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2012	Mar 2013	29	10,000.00	Y		
1.1) FIBER OPTICS AND DATA COMM		2014	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2013	Mar 2014	34	6,882.35	Y		
1.1) FIBER OPTICS AND DATA COMM		2015	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	34	6,561.24	Y		
1.1) FIBER OPTICS AND DATA COMM		2016	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Jun 2016	35	7,061.46	Y		
1.1) FIBER OPTICS AND DATA COMM		2017	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Mar 2017	35	6,517.00	Y		
1.1) FIBER OPTICS AND DATA COMM		2018	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	37	6,594.59	Y		
1.1) FIBER OPTICS AND DATA COMM		2019	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	32	6,639.61	Y		
1.1) FIBER OPTICS AND DATA COMM		2020	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	118	6,635.59	Y		
1.1) FIBER OPTICS AND DATA COMM		2021	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2020	Mar 2021	43	6,720.93	Y		
2) M6001 SIGNAL GENERATORS												
2.1) SIGNAL GENERATORS & ANALYZERS		2012	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2011	Mar 2012	186	16,000.00	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2013	NSWC / CHINA LAKE	WR	CHINA LAKE	Dec 2012	Apr 2013	171	16,000.00	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2014	NSWC / CHINA LAKE	WR	CHINA LAKE	Dec 2013	Apr 2014	72	10,166.67	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	71	9,594.16	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Jun 2016	71	10,629.31	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Mar 2017	73	9,547.95	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	60	12,400.00	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	52	12,476.42	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	122	12,483.61	Y		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)	Aggregated Items: Gen Purp Elec Test Equip (GPETE)

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
3) M6002 OSCILLSCPS, METERS												
3.1) OSCILLSCPS, METERS&COUNTERS		2012	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2011	Mar 2012	545	4,000.00	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2013	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2012	Mar 2013	501	4,000.00	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2014	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2013	Mar 2014	851	3,235.02	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	846	3,630.01	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Jun 2016	846	4,021.67	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Mar 2017	1,005	3,125.37	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	991	3,383.45	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	865	3,381.35	Y		
3.1) OSCILLSCPS, METERS&COUNTERS		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	1,795	3,381.62	Y		
5) M6004 PASSIVE ANCILLARY AND MECHANICAL												
5.1) PASSIVE ANCILLARY AND MECHANICAL		2014	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2013	Mar 2014	1,029	12,955.30	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	1,026	1,542.83	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Oct 2016	1,026	1,709.29	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Jul 2017	1,046	1,547.80	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	1,032	1,674.42	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	901	1,673.28	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	1,899	1,672.99	Y		

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0205604N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.791	6.223	5.193	4.150	0.000	4.150	22.511	20.699	20.980	21.394	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.791	6.223	5.193	4.150	0.000	4.150	22.511	20.699	20.980	21.394	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.791**	**6.223**	**5.193**	**4.150**	**0.000**	**4.150**	**22.511**	**20.699**	**20.980**	**21.394**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.117	0.350	-	-	-	-	-	-	0.103	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Communications Data Link System Technical Refresh (CDLS TR)]: Provides fielding link management computer upgrades to meet Fleet Windows 10 Operating System IA requirements, a second 360 degree data link, as well as the inclusion of digital distribution of Intelligence Surveillance and Reconnaissance (ISR), Full Motion Video (FMV), and Anti-Submarine Warfare (ASW) data in Plain Text (PT) to Automated Digital Network System (ADNS) for shipboard dissemination to support Anti-Access/Area Denial (A2AD). CDLS TR supports various Common Data Link (CDL) air platforms including MH-60R, MQ-4 Triton, MQ-8B/C Fire Scout, P-3 and P-8 to include command and control of the aircraft during flight operations. The CDLS TR upgrade includes a Flight Deck Checkout test link between aircraft on the deck through CDLS to end-user prior to flight operations to ensure end-to-end connectivity of organic assets prior to missions.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0205604N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Network Tactical Common Data Link (CDL)				- / 0.290	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CDLS Tech Refresh (TBD)				- / 9.501	- / 6.223	- / 5.193	- / 4.150	- / 0.000	- / 4.150
P-40	**Total Gross/Weapon System Cost**				**- / 9.791**	**- / 6.223**	**- / 5.193**	**- / 4.150**	**- / 0.000**	**- / 4.150**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Network Tactical Common Data Link (CDL)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CDLS Tech Refresh (TBD)				- / 2.387	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 27.454
P-40	**Total Gross/Weapon System Cost**				**- / 22.511**	**- / 20.699**	**- / 20.980**	**- / 21.394**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY21 funding supports procurement of two(2) Communications Data Link System (CDLS) Technical Refresh (TR) systems on CVN platforms. Due to increased fleet Common Data Link (CDL) operations, CDLS Legacy obsolescence issues, a CDLS Tech Refresh is required to extend the life of the system beyond its intended design. CDLS TR addresses whole system reliability, sub-component obsolescence, and emerging Anti-Access/Area Denial (A2AD) Fleet requirements that are significantly degrading Fleet readiness, including Operational Availability (Ao), and system supportability. CDLS TR also provides IA/Cyber security upgrades to Windows 10 OS.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)	**Aggregated Items Title:** Network Tactical Common Data Link (CDL)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) Network Tactical Common Data Link (CDL)																				
1) LINK-16 Antennas	A		145.000	2	0.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) Network Tactical Common Data Link (CDL)			**-**	**-**	***0.290***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**0.290**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)	**Modification Number / Title:** 1 / CDLS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.501	6.223	5.193	4.150	0.000	4.150	2.387	0.000	0.000	0.000	0.000	27.454
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.501	6.223	5.193	4.150	0.000	4.150	2.387	0.000	0.000	0.000	0.000	27.454
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.501**	**6.223**	**5.193**	**4.150**	**0.000**	**4.150**	**2.387**	**0.000**	**0.000**	**0.000**	**0.000**	**27.454**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Communications Data Link System Technical Refresh (CDLS TR)]: Provides fielding link management computer upgrades to meet Fleet Windows 10 Operating System IA requirements, a second 360 degree data link, as well as the inclusion of digital distribution of Intelligence Surveillance and Reconnaissance (ISR), Full Motion Video (FMV), and Anti-Submarine Warfare (ASW) data in Plain Text (PT) to Automated Digital Network System (ADNS) for shipboard dissemination to support Anti-Access/Area Denial (A2AD). CLS TR supports various Common Data Link (CDL) air platforms including MH-60R, MQ-4 Triton, MQ-8B/C Fire Scout, P-3 and P-8 to include command and control of the aircraft during flight operations. The CDLS TR upgrade includes a Flight Deck Checkout test link between aircraft on the deck through CDLS to end-user prior to flight operations to ensure end-to-end connectivity of organic assets prior to missions.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)	**Modification Number / Title:** 1 / CDLS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: CDLS Tech Refresh												
A Kits												
Recurring												
1.1.1) CDLS TR Procurement - NonOrganic [1]	3 / 4.216	2 / 3.606	1 / 1.511	2 / 3.676	- / -	2 / 3.676	- / -	- / -	- / -	- / -	- / -	8 / 13.009
Subtotal: Recurring	*- / 4.216*	*- / 3.606*	*- / 1.511*	*- / 3.676*	*- / -*	*- / 3.676*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 13.009*
Subtotal: CDLS Tech Refresh	*3 / 4.216*	*2 / 3.606*	*1 / 1.511*	*2 / 3.676*	*- / -*	*2 / 3.676*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*8 / 13.009*
Subtotal: Procurement, All Modification Items	*- / 4.216*	*- / 3.606*	*- / 1.511*	*- / 3.676*	*- / -*	*- / 3.676*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 13.009*
Support *(All Modification Items)*												
2.1) CDLS TR DSA	- / 0.257	- / 0.241	- / 0.136	- / 0.254	- / -	- / 0.254	- / -	- / -	- / -	- / -	- / -	- / 0.888
2.2) CDLS TR Production Support	- / 0.168	- / 0.140	- / 0.087	- / 0.220	- / -	- / 0.220	- / -	- / -	- / -	- / -	- / -	- / 0.615
2.3) CDLS TR Non Recurring Engineering	- / 3.754	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.754
Subtotal: Support	*- / 4.179*	*- / 0.381*	*- / 0.223*	*- / 0.474*	*- / -*	*- / 0.474*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 5.257*
Installation												
Modification Item 1 of 1: CDLS Tech Refresh	- / 1.106	- / 2.236	- / 3.459	- / 0.000	- / 0.000	- / 0.000	- / 2.387	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.188
Subtotal: Installation	*- / 1.106*	*- / 2.236*	*- / 3.459*	*- / -*	*- / -*	*- / -*	*- / 2.387*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 9.188*
Total												
Total Cost (Procurement + Support + Installation)	**9.501**	**6.223**	**5.193**	**4.150**	**0.000**	**4.150**	**2.387**	**0.000**	**0.000**	**0.000**	**0.000**	**27.454**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)	**Modification Number / Title:** 1 / CDLS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: CDLS Tech Refresh

Manufacturer Information

Manufacturer Name: CUBIC	Manufacturer Location: San Diego, California
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018						
Delivery Dates	Dec 2019						

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 7	Production Leadtime *(in Months)*: 9

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		May 2020	May 2021				
Delivery Dates		Feb 2021	Feb 2022				

Installation Information

Method of Implementation: [none specified]:: Installation Name: CDLS TR Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	1 / 1.106	2 / 2.236	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.342
FY 2019	- / -	- / -	2 / 2.306	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.306
FY 2020	- / -	- / -	1 / 1.153	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.153
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.387	- / -	- / -	- / -	0 / 0.000	2 / 2.387
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	1 / 1.106	2 / 2.236	3 / 3.459	- / -	- / -	- / -	2 / 2.387	- / -	- / -	- / -	0 / 0.000	8 / 9.188

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	1	1	-	-	1	1	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	-	1	-	1	1	-	-	1	1	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2950 / Network Tactical Common Data Link (CDL)	**Modification Number / Title:** 1 / CDLS Tech Refresh
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(1) FY21 procurement cost increased to address critical capability gaps on two (2) CVNs.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2960 / Integ Combat System Test Facility

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	48.941	6.251	6.028	5.934	0.000	5.934	6.073	6.185	6.257	6.370	-	92.039
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	48.941	6.251	6.028	5.934	0.000	5.934	6.073	6.185	6.257	6.370	-	92.039
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**48.941**	**6.251**	**6.028**	**5.934**	**0.000**	**5.934**	**6.073**	**6.185**	**6.257**	**6.370**	**-**	**92.039**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.150	0.145	0.255	-	0.255	0.212	0.222	0.226	0.231	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program supports various Navy Land Based Test Sites (LBTS) required to support integration and interoperability testing. Sites include, but are not limited to: Naval Surface Warfare Center (NSWC) Dahlgren, Surface Combat System Center (SCSC) Wallops Island, and NSWC Dam Neck.

The United States Navy has a requirement to fully test and certify computer programs for maturity, Interoperability and Integration (I&I) prior to delivery to the Fleet. Commander, U.S. Fleet Forces Command (CFFC) provided specific direction to develop a unified modernization process and certify all combat system baselines for integration and interoperability as an integral step in the Chief of Naval Operations (CNO) Optimized Fleet Response Plan (O-FRP). Various Navy facilities, serving as LBTS, conduct the required testing in support of CVN, DDG, CG, LHD, LHA, LPD 17 and LSD class ships. These sites also comprise the Navy's Distributed Integration & Interoperability Assessment Capability (DIIAC) (supported through the use of JMETC network) alliance, which performs Interoperability Assessment and Systems Engineering Events (SEEs) for deploying Strike Groups.

These facilities also provide combat system in-service support to respond to emergent fleet problems. This capability tests and certifies new combat system baseline in a lab based environment, which has significantly reduced the cost of corrective action and shifted the burden of problem discovery away from the operator at sea. It also provides support to the acquisition community to conduct interoperability (shift to the left) testing earlier in the acquisition cycle.

As existing system experience parts obsolescence issues and tech refresh updates, the LBTS must procure and install existing test beds to accurately replicate the Command, Control, Communication, Computer, Combat System and Intelligence (C5I) configuration that are designed for the fleet. In addition, new combat systems architectures are under development for new ship classes such as LCS, CVN 78, DDG 1000, as well as new Open Architecture (OA) variants of legacy suites. Procurement of production representative systems of these OA combat systems being delivered to operational fleet units is critical to ensure that testing and subsequent certification of both current and newly installed combat systems is in accordance with NAVSEAINST 9410.2 Naval Warfare Systems Certification Policy (NWSCP) and the Optimized Fleet Response Plan (O-FRP).

The basic procurement outlined herein is directed at expanding various facilities capability to support Interoperability Integration and Stressful Endurance testing. Procurement requirements are directly tied to the interoperability testing schedule and establish independence between test beds allowing for parallel certification efforts. Procurements are required to build the necessary test beds and for laboratory support equipment. This budget procures lab support equipment that various facilities are able to support the new tactical subsystems that use Commercial Off-the-Shelf (COTS) equipment.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2960 / Integ Combat System Test Facility	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

In addition, the basic program provides for equipment/upgrades for the Navy's Distributed Integration & Interoperability Assessment Capability (DIIAC) needed to conduct interoperability assessment testing. The DIIAC consists of 14 land based sites networked to certify computer programs prior to their delivery to the fleet and provides support to the acquisition community to conduct interoperability and integration (shift to the left) testing earlier in the acquisition cycle. Interoperability Assessment and Stressful Endurance testing is required for all deploying strike groups per the Joint Fleet Instruction.

[P40A / M8400 - SESEF Electronic Equipment]: The Shipboard Electronic Systems Evaluation Facilities (SESEF) are Navy owned and operated test sites located near heavy fleet concentrated areas and strategic Forward Deployed Naval Forces Sites. The SESEF Program mission is to provide electromagnetic systems test and evaluation services to afloat and shore commands for upgraded systems, to validate system performance following new construction and overhaul/availability, and to provide real-time assessment of material readiness in an operational environment. Also provided are: system modernization and integration, system and equipment component procurement and software (S/W) upgrades for test systems to include, but not limited to, Tactical Control and Navigation (TACAN), Antenna Radiation Pattern (ARP) systems, Identification Friend or Foe (IFF), Direction Finder (DF)/Radio Direction Finder (RDF), LINK 11/16, Electronic Warfare/Electronic Attack (EW/EA) and HF/VHF/UHF communication systems, including secure voice. SESEFs are used to effectively conduct TACAN certifications, AN/SLQ-32 Electronic Warfare (EW) Planned Maintenance System (PMS) requirements checks, Ship Signals Exploitation Equipment (SSEE) calibrations and PMS checks, and to detect and to isolate shipboard system deficiencies leading to maintenance action to increase ship material readiness at the completion of construction, delivery availabilities, during routine ship operations, and prior to deployment.

[P40A / M8500 - Interoperability Assessment Equipment]: M8500 - Interoperability assessment equipment known as Distributed Integration & Interoperability Assessment Capability (DIIAC) procures upgrades to support the 16 sites that comprise the Navy's DIIAC sites. Procures hardware that provides the DIIAC Operations Center (DOC) the ability to support monitoring and execution of events providing data collection and distribution. Funds are also allocated for site upgrades to meet current standards and allow scalability for DIIAC requirements; and, in addition, to enable the DIIAC to maintain efficiency and product improvement to interface with other Joint communities using Joint Mission Environment Test Community (JMETC) network. Focused on the force-level impact of new systems and platforms under development, the DIIAC supports testing that ensures Commander, Naval Sea System Command/Program Executive Offices (NAVSEA/PEOs) are delivering mature and interoperable warfare systems at the Platform and Strike Group levels, with NAVSEA providing Strike Force Interoperability Certification and Assessments, including IFF Mode 5 Testing. This is the only such testing of combat systems and Command, Control, Communication, Computer, Combat System and Intelligence (C5I) configuration items prior to shipboard delivery for operational use.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2960 / Integ Combat System Test Facility

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	ICSTF Program				- / 48.941	- / 6.251	- / 6.028	- / 5.934	- / -	- / 5.934
P-40	**Total Gross/Weapon System Cost**				**- / 48.941**	**- / 6.251**	**- / 6.028**	**- / 5.934**	**- / 0.000**	**- / 5.934**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
Funding for procurements and installations for upgrades and modernization of the eight operational sites across the AORs to support the surface fleet spectrum requirements.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2960 / Integ Combat System Test Facility	**Aggregated Items Title:** ICSTF Program

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) M8400 - SESEF Electronic Equipment																				
1.1) SESEF Electronic Equipment	A		-	-	30.170	-	-	3.027	-	-	2.772	-	-	2.580	-	-	-	-	-	2.580
Subtotal: 1) M8400 - SESEF Electronic Equipment			**-**	**-**	***30.170***	**-**	**-**	***3.027***	**-**	**-**	***2.772***	**-**	**-**	***2.580***	**-**	**-**	**-**	**-**	**-**	***2.580***
2) M8500 - Interoperability Assessment Equipment																				
2.1) Interoperability Assessment Equipment	A		-	-	18.771	-	-	3.224	-	-	3.256	-	-	3.354	-	-	-	-	-	3.354
Subtotal: 2) M8500 - Interoperability Assessment Equipment			**-**	**-**	***18.771***	**-**	**-**	***3.224***	**-**	**-**	***3.256***	**-**	**-**	***3.354***	**-**	**-**	**-**	**-**	**-**	***3.354***
Total			**-**	**-**	**48.941**	**-**	**-**	**6.251**	**-**	**-**	**6.028**	**-**	**-**	**5.934**	**-**	**-**	**-**	**-**	**-**	**5.934**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2970 / EMI Control Instrumentation

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	45.296	4.183	4.209	4.334	0.000	4.334	4.409	4.493	4.542	4.630	-	76.096
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	45.296	4.183	4.209	4.334	0.000	4.334	4.409	4.493	4.542	4.630	-	76.096
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**45.296**	**4.183**	**4.209**	**4.334**	**0.000**	**4.334**	**4.409**	**4.493**	**4.542**	**4.630**	**-**	**76.096**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The EMI Control Instrumentation Program is supported by OPNAV N2N6, OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98. The EMI Control Instrumentation Program provides Cradle to Grave Systems Engineering for Mission Assurance by implementing Electromagnetic Compatibility (EMC) hardware solutions, Spectrum Management (SM) software solutions, and by procuring specialized test equipment used in the characterization/ quantification of EMI problems aboard US Navy platforms. This ensures equipment, systems, and platforms meet their Operational Mission Requirements and goals within their intended operational Electromagnetic (EM) environment.

MA004 - EMI (HARDWARE) FIXES: Procurement and installation of Electromagnetic Interference (EMI) Hardware Solutions (i.e. Fixes) will achieve Electromagnetic Compatibility (EMC) among and between shipboard electronic/electric systems and/or equipment. This will be accomplished by determining the optimal EMI fix hardware, evaluating the effectiveness of the EMI solution, then procuring and installing the required hardware for mitigation verification. The fixes may include various types of radio frequency (RF) filters, limiters, blankers, radar absorbing material (RAM) and shielding methods. MA004 - EMI (Hardware) Fixes is supported by OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98.

MA104 - EMI (SOFTWARE) FIXES: Procurement and installation of EMI Software Fixes for platform/strike group/Area of Operation. These specific spectrum procedures (software application capabilities) and frequency management techniques (software modules) will be used to eliminate and reduce EMI when hardware solutions are unacceptable. Funds will also be used to provide engineering support to the enhancement of spectrum software applications through the procurement of models and other capabilities, including ILS for software tools/utilities/applications that correct/mitigate operational EMI. MA104 - EMI (Software) Fixes are supported by OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98.

MA204 - EMI CONTROL INSTRUMENTATION: EMI Control Instrumentation will procure specialized test equipment used in the characterization and quantification of EMI problems aboard US Navy platforms. Instrumentation will be procured for use in identifying the sources of EMI and determining the extent of EMI so that effective corrective measures can be applied. The instrumentation procured will include automated and special EMI test equipment (e.g., for spectrum analysis, mapping field intensities, etc.). EMI Control Instrumentation can include both hardware and software products that will enhance or streamline data collection efforts, including the ability to provide remote access capability. MA204 - EMI CONTROL INSTRUMENTATION are supported by OPNAV N2N6.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2970 / EMI Control Instrumentation

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	EMI Control Instrumentation				- / 45.296	- / 4.183	- / 4.209	- / 4.334	- / -	- / 4.334
P-40	**Total Gross/Weapon System Cost**				**- / 45.296**	**- / 4.183**	**- / 4.209**	**- / 4.334**	**- / 0.000**	**- / 4.334**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
MA004 (EMI HDW Fixes) OPN Funds are used to procure and install (P/I) EMI Fixes on deploying ships and submarines. The number of EMI Fixes procured (MA004 Hardware Fixes) are dependent on the number of ships/submarines in the fleet and when they deploy.

MA104 (EMI SFW Fixes) procures and installs SFW Fixes, i.e. the Afloat Electromagnetic Spectrum Operations Program (AESOP). This effort retains responsibility for the procurement of models and frequency management techniques.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10 | **P-1 Line Item Number / Title:** 2970 / EMI Control Instrumentation | **Aggregated Items Title:** EMI Control Instrumentation

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) MA004 EMI (HARDWARE) FIXES																				
1.1) MA004 EMI (HARDWARE) FIXES - N96	A		-	-	6.548	-	-	1.067	-	-	1.040	-	-	1.077	-	-	-	-	-	1.077
1.2) MA004 EMI (HARDWARE) FIXES - N95	A		-	-	4.547	-	-	0.734	-	-	0.748	-	-	0.771	-	-	-	-	-	0.771
1.3) MA004 EMI (HARDWARE) FIXES - N97	A		-	-	4.718	-	-	0.760	-	-	0.773	-	-	0.796	-	-	-	-	-	0.796
1.4) MA004 EMI (HARDWARE) FIXES N98	A		-	-	5.650	-	-	0.707	-	-	0.720	-	-	0.739	-	-	-	-	-	0.739
Subtotal: 1) MA004 EMI (HARDWARE) FIXES			**-**	**-**	***21.463***	**-**	**-**	***3.268***	**-**	**-**	***3.281***	**-**	**-**	***3.383***	**-**	**-**	**-**	**-**	**-**	***3.383***
2) MA104 EMI (SOFTWARE) FIXES																				
2.1) MA104 EMI (SOFTWARE) FIXES - N95	A		-	-	4.336	-	-	0.081	-	-	0.083	-	-	0.086	-	-	-	-	-	0.086
2.2) MA104 EMI (SOFTWARE) FIXES - N96	A		-	-	6.411	-	-	0.119	-	-	0.116	-	-	0.120	-	-	-	-	-	0.120
2.3) MA104 EMI (SOFTWARE) FIXES - N97	A		-	-	4.608	-	-	0.084	-	-	0.086	-	-	0.088	-	-	-	-	-	0.088
2.4) MA104 EMI (SOFTWARE) FIXES - N98	A		-	-	6.299	-	-	0.078	-	-	0.080	-	-	0.082	-	-	-	-	-	0.082
Subtotal: 2) MA104 EMI (SOFTWARE) FIXES			**-**	**-**	***21.654***	**-**	**-**	***0.362***	**-**	**-**	***0.365***	**-**	**-**	***0.376***	**-**	**-**	**-**	**-**	**-**	***0.376***
3) MA204 EMI CONTROL INSTRUMENTATION																				
3.1) MA204 EMI CONTROL INSTRUMENTATION - N2N6	A		-	-	2.179	-	-	0.553	-	-	0.563	-	-	0.575	-	-	-	-	-	0.575
Subtotal: 3) MA204 EMI CONTROL INSTRUMENTATION			**-**	**-**	***2.179***	**-**	**-**	***0.553***	**-**	**-**	***0.563***	**-**	**-**	***0.575***	**-**	**-**	**-**	**-**	**-**	***0.575***
Total			**-**	**-**	**45.296**	**-**	**-**	**4.183**	**-**	**-**	**4.209**	**-**	**-**	**4.334**	**-**	**-**	**-**	**-**	**-**	**4.334**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	620.962	143.089	153.334	159.815	0.000	159.815	157.723	174.000	212.830	225.634	7,611.992	9,459.379
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	620.962	143.089	153.334	159.815	0.000	159.815	157.723	174.000	212.830	225.634	7,611.992	9,459.379
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**620.962**	**143.089**	**153.334**	**159.815**	**0.000**	**159.815**	**157.723**	**174.000**	**212.830**	**225.634**	**7,611.992**	**9,459.379**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.438	0.214	0.157	-	0.157	-	-	-	-	-	0.809
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2021 funding request was reduced by $10 million to account for the availability of prior year execution balances.

[P40A / DC004 CALIBRATION STANDARDS]: These funds procure Calibration Standards to execute a detailed, multi-year sustainment and modernization plan for intermediate, organizational and depot level maintenance activities. Calibration Standards are equipment employed to ensure the accuracy of test equipment used to install, align, and maintain all navy weapons systems ashore and afloat. The Navy's inventory of Calibration Standards are approaching obsolescence and require modernization to avoid deterioration in accuracy and calibration of our weapons systems. Many of the original standards are no longer in production, so replacement standards must be purchased from newer model inventory, some of which have a greater unit cost. Failure to maintain accurate calibration standards will cause our weapons systems to perform below expectations. The impacts would range from premature mechanical failures due to incorrectly installed mechanical components, to radar and missile operational inaccuracies due to improperly set components. A defined, multi-year modernization plan for Calibration Standards is in place. The unit cost of the replacement calibration standards to be procured, range from $11K (general purpose power meter) to $350K (vector network analyzer); whereas the unit cost of older standards procured in prior years ranged from $18K to $52K. This change in unit cost is attributable to the diversity and varying complexity of calibration standards to be procured and their measurement requirements. Several multi-year contracts requirements have been initiated and several more packages are in process. Any reduction or delay in funding for Calibration Standards will result in a negative impact to the Fleet and default Navy contract awards. Not modernizing/procuring the planned calibration standards due to insufficient (reduced) funding will drastically impact the overall health of the Navy calibration program, directly impacting the performance of every NAVSEA cognizance weapon system including the Aegis Weapon System afloat and Aegis Ashore Romania/Poland, AN/APX-72 IFF transponder, AN/BRD-7 ECM Intercept System, AN/SQQ-34 ASW Module and all afloat radio systems. Furthermore, a reduction degrades readiness to support ships and availabilities within all major naval shipyards. Calibration Standards modernization, procurement and outfitting is a readiness enabler and therefore this reduction would cause a major break in the fleet readiness kill chain.

[P40A / DC019 RADAR RESTORATION AN/SPS-67 ANTENNA]: Funding in this line establishes an antenna manufacturing capability at Naval Surface Warfare Center (NSWC) Crane needed to provide additional rotatable pool antennas and associated engineering changes for the AN/SPS-67(V)3 to support the restoration of installed fleet antennas. The current number of available antennas is insufficient to support the fleet population. This has led to antennas operating in the field beyond their periodicity, resulting in decreased detection and tracking capability.

[P40A / DC020 DUAL BAND RADAR (DBR)]: Funding is required to establish the In-Service Engineering Agent (ISEA), Original Equipment Manufacturer (OEM) production services and support for Configuration Management. Funding also implements the DBR Life Cycle Sustainment Plan (LCSP) and infrastructure, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Plan, associated hardware and software obsolescence mod kits, procurement of Engineering Change Proposals (ECPs), associated logistics products and on-board allowance requirements to enable system operation. Production Support is also required to assist with DBR Combat System Integration and Technical Documentation. Funding also supports CVN 78 and DDG 1000 Class Combat System Ship Qualification Testing (CSSQT). Additional

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

limitations will be identified during CVN78/DDG1000 Shipboard Activation, Integration and At-Sea Testing. Additionally, as a result of DBR land based and Self Defense Test Ship (SDTS) events limitations were identified in the Dual Band Radar (DBR) performance that directly impacted CVN 78 and DDG 1000 class readiness. These limitations require ECPs to correct the performance areas of the radar for Air Traffic Control and Integrated Combat Systems (e.g., False Clutter Tracks, Short Range Tracking, General Tracking, Slow Air Tracking, Waveform Scheduling, and code stability). The Prime Contractor and Government Technical Team have documented critical radar issues that require correction via ECPs. Funding for these ECP efforts is required due to the engineering and technical complexity of the change proposals needed to satisfy combat system qualification requirements. The Under Secretary of Defense (Acquisition, Technology and Logistics) Independent Review Team (IRT) recommended that the Navy establish infrastructure and mechanisms to accelerate the acquisition of spares for DBR and develop a repair capability for DBR equipment. DBR Special Test Equipment and Infrastructure funding for (1) test equipment and support for a repair depot for assemblies and subassemblies for DBR components, including Common Array Power System (CAPS), and Common Array Cooling System (CACS); (2) resolution of system obsolescence that will degrade system Ao; and, (3) establishment of product support engineering infrastructure. The additional DBR sustainment and infrastructure efforts will facilitate the transition of material sparing support of DBR to NAVSUP.

[P40A / DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)]: The Maritime Radar Processor (MRP) was developed to improve the detection of small boats/targets by USN ships. Funding in this line will be used to integrate and field small boat detection software improvements to AN/SPS-67(V)5 Surface Search Radar. Funding will also be used to field software build 3.0 for various corrections including tracker fixes, Windows Operating System (OS) elimination, improved Information Assurance (IA) posture, and squint correction to improve bearing accuracy.

[P40A / DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR]: AN/SPS-74(V) PERISCOPE DETECTION RADAR (PDR): The CVN Periscope Detection Radar (PDR), AN/SPS-74(V) is a radar that provides automatic detection and discrimination of submarine periscopes using advanced algorithms enabling discrimination of periscopes from surface contacts, buoys, small boats, floating mines, etc. Four Advanced Development Models(ADMs) have been installed and are operating on CVN class ships. The AN/SPS-74 program was cancelled in FY12. FY19 will be used for Engineering Change Proposals (ECPs) to address obsolescence issues, sustainment, and continued operation of installed AN/SPS-74 ADMs as well as de-installation. Funding for SPS-74 ended in FY19.

[P40A / DC022 RADAR RESTORATION MATERIAL]: Radar Restoration funding procures components to support radar restoration (Arrays and miscellaneous Antenna Sub-Assemblies) and Engineering Change Proposals (ECPs) to address obsolescence and improve supportability. The Antenna Overhaul Kits line has been added to the budget starting in FY20 due to the revised bill of materials and overhaul procedures associated with Radar Restoration assets. The Antenna Overhaul Kit consists of various components including waveguides, nuts, bolts, bearings, washers, seals, etc. In order to fund the new Antenna Overhaul requirement, the quantity of SPS-48 Arrays has been decreased for FY20-FY25.

[P3A / DC001 - SPS-73 RADAR]: The AN/SPS-73(V) Radar provides navigation and general surface search radar functionality on all U.S. Navy ships. The AN/SPS-73(V)12 is the Automatic Radar Plotting Aid (ARPA).
Navigation Radar for the U.S. Navy Funding will be utilized for engineering changes, which will improve surface combatant's ability to engage fast attack craft/fast in shore attack craft (FAC/FIAC) tracking and periscope detection and discrimination, as well as address cybersecurity shortfalls and Commercial-Off-The-Shelf (COTS) obsolescence of the legacy AN/SPS-73 systems. The AN/SPS-73 Next Generation Surface Search Radar (NGSSR) will update the current AN/SPS-73(V)12 and replace the AN/SPS-67(V) and all commercially provided Navigation Radars fielded in the fleet. NGSSR production has been accelerated as a result of the October 2017 Commander Fleet Forces Comprehensive Review, which was directly related to the McCain and Fitzgerald collisions.

[P3A - 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)]: The AN/SPS-48G 3-D Air Surveillance Radar is a follow-on to the existing AN/SPS-48E onboard Aircraft Carriers and large-deck Amphibious ships. AN/SPS-48G was initiated in response to Fleet complaints regarding AN/SPS-48E reliability and supportability. Upgrade of the AN/SPS-48E with the AN/SPS-48G remains a high Fleet priority as it will reduce Operation and Support (O&S) costs and improve Operational Availability. Both factors are cited by the Fleet as unsatisfactory for the AN/SPS-48E. The goal is to replace the AN/SPS-48E as rapidly as possible so the Fleet can realize this cost avoidance. Current efforts include the manufacturing of the AN/SPS-48G upgrade kits with associated production support as well as modifications to the AN/SPS-48G brought about by initial Fleet introduction and Fleet operations. Production lead time is 24 months for the initial unit with subsequent units delivered at two month intervals after initial delivery. Equipment delivery for installation is required thirty days prior to FMP availability start in accordance with Navy Modernization Process Management. Engineering Change Order funding is required to address Fleet recommended modifications/requirements and Information Assurance, Obsolescence, and Diminishing Manufacturing Sources (DMS) issues. Engineering Change Proposal funding is required to initiate incorporation of High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change needs to be translated into the different hardware and software architectures of the AN/SPS-48G. FY18 was the last year of AN/SPS-48G procurements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P3A - 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)]: Provides real-time volunumeric wind profiles, convective weather detection/display, and radar refractivity assessments from AN/SPY-1 radar returns. TEP is an adjunct processor and display, tapping radar data from weather and refractivity data, with users able to access information through Secret Internet Protocol Router (SIPR). Funding for TEP ends in FY19. FY19 funding is being used to remove equipment and closeout program.

[P3A - 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS]: DC018 AN/SPY-1 RM&A IMPROVEMENTS - These Reliability, Maintainability, and Availability (RM&A) improvements are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/SPY-1 Radar Total Ownership Cost (TOC) reductions. The improvements include, but are not limited to, installation for Sidewall Capacitor Circuit Protection and 10kW Traveling Wave Tube (TWT) Monitoring Circuits Ordnance Alterations (ORDALTS) for AN/SPY-1; B (V), D, D (V), CG and DDGs. Solid State Switch Assemblies (SSSA) will replace legacy switch tube modulator deck via an ORDALT. Multi-Mission Signal Processor (MMSP) is the signal processor for the AN/SPY-1 radar. MMSP Refresh (MMSP-R) cabinets will be procured to provide production representative configurations for land-based testing and training to support AEGIS ships at AEGIS Training and Readiness Center (ATRC) and Surface Combat System Center (SCSC) Wallops Island. Procurement and installation of SSSA for DDG Ships, Shore Sites and Spares are aligned with the DDG Modernization availability periods.

[P3A - 5 / DC024 - AMDR Operations and Support (O&S)]: DC024 AMDR Operations and Support (O&S) - AMDR has been designated the AN/SPY-6(V)1 to address Ballistic Missile Defense (BMD) and Air Defense (AD) capability gaps identified in the Maritime Air and Missile Defense of Joint Forces (MAMDJF) Initial Capabilities Document (ICD); AN/SPY-6(V)1 will be initially fielded on the DDG-51 FLT-III platform. A variant of the AN/SPY-6(V) will replace the AN/SPY-1 radar on existing DDG 51 FLT-IIA ships. The AN/SPY-6(V) Product Support Strategy established NSWC Port Hueneme Division as the Product Support Integrator (PSI) for overall system Operational Availability (AO) and Backend Processing (BEP) subsystem(s) Life Cycle Support. The BEP is comprised of Commercial off the Shelf (COTS) x86 based Modular Open System Architecture (MOSA), allowing for Form-Fit-Function (FFF) replacement with next generation server and processer technology. A Product Support Provider (PSP), defined in the LCSP and Acquisition Strategy, as the Advanced Processing System (APS) contract vendor will execute Supply Support of the BEP. The APS PSP contributes to overall system readiness by managing BEP repair/ replacement, obsolescence, and technology refresh by attrition within a performance based service contract, leveraging AN/SPY-6(V)'s MOSA and COTS x86 industrial base. Funding will sustain the Navy's next generation family of radars, AN/SPY-6(V). This applies to all current and future variants of the AN/SPY-6(V); including future modifications or separate programs to address different mission areas and utilization onboard different ship classes.

The "To Complete" is represented of the AN/SPY-6(V)1's full 40 year life cycle across 22 ship years (880 ship years).

[P3A - 6 / DC025 - SPEIR BLOCK I]: SPEIR Block I will provide a common EO/IR Electronic Support (ES) capability to all surface ships that will passively find, fix, track, and target current / emerging threats in support of the following warfare missions: Navigation, Counter Fast Attack Craft (FAC) / Fast In-shore Attack Craft (FIAC), Counter Unmanned Aircraft Systems (UAS) / Unmanned Aerial Vehicle (UAV), and Anti-Ship Cruise Missile (ASCM) Defense. SPEIR Block I will consist of a passive Wide Field of View (WFOV) capability with a 360 degree field-of-view optical sensor for panoramic detection, tracking, and identification for 24/7 day/night shipboard situational awareness. SPEIR Block I will also include an enhanced, high resolution Narrow Field of View (NFOV) and laser system capability that will provide range-finding and precision 3D target tracking. SPEIR Block II will be a future program that will build on Block I and add capability for Periscope Detection and Discrimination (PDD) and Mine Like Object (MLO) avoidance. Development Status/Major Milestones are: Milestone B, procurement of Long Lead Material (LLM) and Milestone C Low Rate Initial Production (LRIP). The acquisition strategy for the FY23 LRIP units is to procure Long Lead Material (LLTM) for one shore site and one Fleet unit, with the completion of the FY23 LRIPs being awarded at MS C planned for 3QFY24.

There will be three configurations for the SPEIR Block I system: 1.1.1 SPEIR Block I provides funding for DDG 51, CG, LCS and LPD class ships and also consists of the WFOV, NFOV and laser capability. 1.1.2 SPEIR Block I Scaled is for CVN, LHD and LHA class ships. The scaled configuration will provide the WFOV capability and will be integrated with existing NFOV capability on these classes of ships. 1.1.3 is the SPEIR Shore Site configuration. The shore site configuration is a partial configuration specifically to support shore based training and testing.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment

P-1 Line Item Number / Title:
2980 / Items less than $5 Million

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Items less than $5 Million	P-5a			- / 120.540	- / 59.191	- / 35.911	- / 38.228	- / -	- / 38.228
P-3a	1 / DC001 - SPS-73 RADAR (TBD)				- / 78.584	- / 52.172	- / 81.855	- / 84.565	- / 0.000	- / 84.565
P-3a	2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR) (TBD)				- / 328.995	- / 5.648	- / 9.076	- / 7.042	- / 0.000	- / 7.042
P-3a	3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP) (TBD)				- / 8.793	- / 1.262	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS (TBD)				- / 84.050	- / 24.816	- / 26.492	- / 28.152	- / 0.000	- / 28.152
P-3a	5 / DC024 - AMDR Operations and Support (O&S) (TBD)			P384	- / 0.000	- / 0.000	- / 0.000	- / 1.828	- / 0.000	- / 1.828
P-3a	6 / DC025 - SPEIR BLOCK I (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 620.962**	**- / 143.089**	**- / 153.334**	**- / 159.815**	**- / 0.000**	**- / 159.815**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-40a	Items less than $5 Million	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / DC001 - SPS-73 RADAR (TBD)				- / 93.476	- / 87.787	- / 57.567	- / 58.671	- / 302.471	- / 897.148
P-3a	2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR) (TBD)				- / 1.024	- / 2.029	- / 0.950	- / 0.969	- / 4.675	- / 360.408
P-3a	3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 10.055
P-3a	4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS (TBD)				- / 16.646	- / 16.590	- / 56.532	- / 57.642	- / 287.501	- / 598.421
P-3a	5 / DC024 - AMDR Operations and Support (O&S) (TBD)			P384	- / 3.920	- / 6.997	- / 33.700	- / 39.443	- / 5,576.933	- / 5,662.821
P-3a	6 / DC025 - SPEIR BLOCK I (TBD)				- / 0.000	- / 24.195	- / 24.471	- / 27.259	- / 1,189.430	- / 1,265.355
P-40	**Total Gross/Weapon System Cost**				**- / 157.723**	**- / 174.000**	**- / 212.830**	**- / 225.634**	**- / 7,611.992**	**- / 9,459.379**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than $5 Million	Aggregated Items Title: Items less than $5 Million

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) DC001 SPS-73 RADAR																				
1.1) TECH REFRESH	A		209,565.89	129	27.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) DC001 SPS-73 RADAR			**-**	**-**	***27.034***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) DC004 CALIBRATION STANDARDS																				
2.1) CALIBRATION STANDARDS (1)(†)	A		28,929.51	993	28.727	24,133.82	411	9.919	24,359.25	373	9.086	24,610.24	508	12.502	-	-	-	24,610.24	508	12.502
Subtotal: 2) DC004 CALIBRATION STANDARDS			**-**	**-**	***28.727***	**-**	**-**	***9.919***	**-**	**-**	***9.086***	**-**	**-**	***12.502***	**-**	**-**	**-**	**-**	**-**	***12.502***
3) DC019 RADAR RESTORATION AN/SPS-67 ANTENNA																				
3.1) HARDWARE	A		493,000.00	5	2.465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) OTHER	A		-	-	1.716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) DC019 RADAR RESTORATION AN/SPS-67 ANTENNA			**-**	**-**	***4.181***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4) DC020 DUAL BAND RADAR (DBR)																				
4.1) DBR PRODUCTION SUPPORT	A		-	-	9.483	-	-	2.816	-	-	2.916	-	-	3.221	-	-	-	-	-	3.221
4.2) DBR ENGINEERING CHANGE PROPOSALS (ECPS)	A		-	-	34.429	-	-	11.382	-	-	13.675	-	-	12.566	-	-	-	-	-	12.566
4.3) DBR SPECIAL TEST EQUIPMENT AND INFRASTRUCTURE (2)	A		-	-	-	-	-	30.207	-	-	5.307	-	-	5.567	-	-	-	-	-	5.567
Subtotal: 4) DC020 DUAL BAND RADAR (DBR)			**-**	**-**	***43.912***	**-**	**-**	***44.405***	**-**	**-**	***21.898***	**-**	**-**	***21.354***	**-**	**-**	**-**	**-**	**-**	***21.354***
5) DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)																				
5.1) AN/SPS-67(V)5 MARITIME RADAR PROCESSOR	A		-	-	2.922	-	-	-	-	-	0.729	-	-	-	-	-	-	-	-	-
Subtotal: 5) DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)			**-**	**-**	***2.922***	**-**	**-**	**-**	**-**	**-**	***0.729***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
6) DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR																				
6.1) PRODUCTION SUPPORT	A		-	-	3.694	-	-	0.674	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR			**-**	**-**	***3.694***	**-**	**-**	***0.674***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7) RED FALCON (OCO)																				
7.1) RED FALCON (OCO)	A		-	-	5.870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than $5 Million	Aggregated Items Title: Items less than $5 Million

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Subtotal: 7) RED FALCON (OCO)			**-**	**-**	***5.870***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
8) DC022 RADAR RESTORATION MATERIAL (3)																				
8.1) 48 ARRAYS(†)	A		9,827.78	360	3.538	10,011.11	360	3.604	10,190.08	242	2.466	10,376.92	260	2.698	-	-	-	10,376.92	260	2.698
8.2) ANTENNA SUB-ASSEMBLIES	A		-	-	0.242	-	-	0.246	-	-	0.252	-	-	0.257	-	-	-	-	-	0.257
8.3) ENGINEERING CHANGE PROPOSALS (ECPS)	A		-	-	0.420	-	-	0.343	-	-	0.287	-	-	0.333	-	-	-	-	-	0.333
8.4) ANTENNA OVERHAUL KIT (4)	A		-	-	-	-	-	-	-	-	1.193	-	-	1.084	-	-	-	-	-	1.084
Subtotal: 8) DC022 RADAR RESTORATION MATERIAL			**-**	**-**	***4.200***	**-**	**-**	***4.193***	**-**	**-**	***4.198***	**-**	**-**	***4.372***	**-**	**-**	**-**	**-**	**-**	***4.372***
Total			**-**	**-**	**120.540**	**-**	**-**	**59.191**	**-**	**-**	**35.911**	**-**	**-**	**38.228**	**-**	**-**	**-**	**-**	**-**	**38.228**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) Calibration Standards equipment unit costs and quantities vary due to the diversity and varying complexity of Calibration Standards equipment being procured from year to year; the requested funding addresses calibration and maintenance operational requirements across shipboard/shore-based activities and programs.

(2) Since the FY 2020 President's Budget request, the increase in FY19 DBR Special Test Equipment funding was due to the approval of additional funding to address DBR sustainment issues. The FY19 funds were focused on the resolution of component obsolescence issues. The DBR program also invested in the initial infrastructure that supports repairs of components at the DBR Depot Repair facility. The FY19 funding will be used to procure a test station required for VSR component repairs. DBR program funding initiated sustainment oversight processes that included a Failure Reporting, Analysis and Corrective Action System (FRACAS) and routine installation of OEM computer software maintenance updates.

(3) Radar Restoration funding procures components to support radar restoration (Arrays and miscellaneous Antenna Sub-Assemblies) and Engineering Change Proposals (ECPs) to address obsolescence and improve supportability. The Antenna Overhaul Kits line has been added to the budget starting in FY20 due to the revised bill of materials and overhaul procedures associated with Radar Restoration assets. The Antenna Overhaul Kit consists of various components including waveguides, nuts, bolts, bearings, washers, seals, etc. In order to fund the new Antenna Overhaul requirement, the quantity of SPS-48 Arrays has been decreased for FY20-FY25.

(4) Antenna Overhaul Kits line has been added to budget for FY20 and out due to the revised bill of materials and overhaul procedures associated with Radar Restoration assets. The Antenna Overhaul Kit consist of various components including waveguides, nuts, bolts, bearings, washers, seals, etc. In order to find the new Antenna Overhaul requirement, the quantity of SPS-48 Arrays has been decreased for FY20-FY25. The SPS-48 Array "To Complete" has increased from quantity 1,080 to 1,738.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than $5 Million	Aggregated Items: Items less than $5 Million

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2) DC004 CALIBRATION STANDARDS												
2.1) CALIBRATION STANDARDS (1)		2019	NSWC/CHINA LAKE / CHINA LAKE	WR	CORONA	Oct 2018	Oct 2018	411	24,133.82	N		
2.1) CALIBRATION STANDARDS (1)		2020	NSWC/CHINA LAKE / CHINA LAKE	WR	CORONA	Oct 2019	Oct 2019	373	24,359.25	N		
2.1) CALIBRATION STANDARDS (1)		2021	NSWC/CHINA LAKE / CHINA LAKE	WR	CORONA	Oct 2020	Oct 2020	508	24,610.24	N		
8) DC022 RADAR RESTORATION MATERIAL												
8.1) 48 ARRAYS		2019	NSWC CRANE / CRANE, IN	Various	NSWC CRANE	Jan 2019	Nov 2019	360	10,011.11	Y		
8.1) 48 ARRAYS		2020	NSWC CRANE / CRANE, IN	Various	NSWC CRANE	Jan 2020	Nov 2020	242	10,190.08	Y		
8.1) 48 ARRAYS		2021	NSWC CRANE / CRANE, IN	Various	NSWC/CRANE	Jan 2021	Nov 2021	260	10,376.92	Y		

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 1 / DC001 - SPS-73 RADAR
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	78.584	52.172	81.855	84.565	0.000	84.565	93.476	87.787	57.567	58.671	302.471	897.148
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	78.584	52.172	81.855	84.565	0.000	84.565	93.476	87.787	57.567	58.671	302.471	897.148
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**78.584**	**52.172**	**81.855**	**84.565**	**0.000**	**84.565**	**93.476**	**87.787**	**57.567**	**58.671**	**302.471**	**897.148**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPS-73(V) Radar provides navigation and general surface search radar functionality on all U.S. Navy ships. The AN/SPS-73(V)12 is the Automatic Radar Plotting Aid (ARPA). Navigation Radar for the U.S. Navy Funding will be utilized for engineering changes, which will improve surface combatant's ability to engage fast attack craft/fast in shore attack craft (FAC/FIAC) tracking and periscope detection and discrimination, as well as address cybersecurity shortfalls and Commercial-Off-The-Shelf (COTS) obsolescence of the legacy AN/SPS-73 systems. The AN/SPS-73 Next Generation Surface Search Radar (NGSSR) will update the current AN/SPS-73(V)12 and replace the AN/SPS-67(V) and all commercially provided Navigation Radars fielded in the fleet. NGSSR production has been accelerated as a result of the October 2017 Commander Fleet Forces Comprehensive Review, which was directly related to the McCain and Fitzgerald collisions.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 1 / DC001 - SPS-73 RADAR
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/SPS-73	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DC001 - SPS-73 RADAR												
B Kits												
Recurring												
1.1.1) SPS-73 SYSTEMS - NonOrganic	79 / 18.452	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	79 / 18.452
1.1.2) NEXT GENERATION NON RECURRING ENGINEERING - Organic (5)	- / 24.612	- / 31.983	- / 4.263	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 60.858
1.1.3) NEXT GENERATION SURFACE SEARCH RADAR - NonOrganic (6)	- / -	6 / 6.487	40 / 42.436	31 / 33.875	- / -	31 / 33.875	22 / 24.761	11 / 12.752	11 / 13.135	22 / 27.057	57 / 71.863	200 / 232.366
1.1.4) NEXT GENERATION SURFACE SEARCH RADAR SHORE SITES - NonOrganic (7)	- / -	3 / 3.241	6 / 6.556	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 9.797
Subtotal: Recurring	*- / 43.064*	*- / 41.711*	*- / 53.255*	*- / 33.875*	*- / -*	*- / 33.875*	*- / 24.761*	*- / 12.752*	*- / 13.135*	*- / 27.057*	*- / 71.863*	*- / 321.473*
Subtotal: DC001 - SPS-73 RADAR	*79 / 43.064*	*9 / 41.711*	*46 / 53.255*	*31 / 33.875*	*- / -*	*31 / 33.875*	*22 / 24.761*	*11 / 12.752*	*11 / 13.135*	*22 / 27.057*	*57 / 71.863*	*288 / 321.473*
Subtotal: Procurement, All Modification Items	*- / 43.064*	*- / 41.711*	*- / 53.255*	*- / 33.875*	*- / -*	*- / 33.875*	*- / 24.761*	*- / 12.752*	*- / 13.135*	*- / 27.057*	*- / 71.863*	*- / 321.473*
Support *(All Modification Items)*												
2.1) PRODUCTION SUPPORT (8)	- / 1.673	- / 4.660	- / 5.989	- / 5.109	- / -	- / 5.109	- / 4.738	- / 4.775	- / 1.025	- / 2.684	- / 9.394	- / 40.047
2.2) MISCELLANEOUS ECP SUPPORT (9)	- / 4.012	- / 5.307	- / 6.982	- / 5.330	- / -	- / 5.330	- / 4.730	- / 5.392	- / 3.209	- / 4.467	- / 17.489	- / 56.918
Subtotal: Support	*- / 5.685*	*- / 9.967*	*- / 12.971*	*- / 10.439*	*- / -*	*- / 10.439*	*- / 9.468*	*- / 10.167*	*- / 4.234*	*- / 7.151*	*- / 26.883*	*- / 96.965*
Installation												
Modification Item 1 of 1: DC001 - SPS-73 RADAR	- / 29.835	- / 0.494	- / 15.629	- / 40.251	- / 0.000	- / 40.251	- / 59.247	- / 64.868	- / 40.198	- / 24.463	- / 203.725	- / 478.710
Subtotal: Installation	*- / 29.835*	*- / 0.494*	*- / 15.629*	*- / 40.251*	*- / -*	*- / 40.251*	*- / 59.247*	*- / 64.868*	*- / 40.198*	*- / 24.463*	*- / 203.725*	*- / 478.710*
Total												
Total Cost (Procurement + Support + Installation)	**78.584**	**52.172**	**81.855**	**84.565**	**0.000**	**84.565**	**93.476**	**87.787**	**57.567**	**58.671**	**302.471**	**897.148**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 1 / DC001 - SPS-73 RADAR
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DC001 - SPS-73 RADAR

Manufacturer Information

Manufacturer Name: AN/SPS-73 Next Generation Navigation Radar - ULTRA ELECTRONICS OCEAN SYSTEMS, INC.	Manufacturer Location: BRAINTREE, MA
Administrative Leadtime *(in Months)*: 0	Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2020	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates	Mar 2021	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025	Mar 2026

Installation Information

Method of Implementation: [none specified]:: Installation Name: SPS-73 SYSTEMS

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	79 / 29.835	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	79 / 29.835
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	79 / 29.835	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	79 / 29.835

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79
Out	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 1 / DC001 - SPS-73 RADAR
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DC001 - SPS-73 RADAR

Installation Information

Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	0 / 6.387	6 / 7.047	0 / 0.000	6 / 7.047	- / -	- / -	- / -	- / -	0 / 0.000	6 / 13.434
FY 2020	- / -	- / -	0 / 9.242	4 / 25.486	0 / 0.000	4 / 25.486	21 / 37.461	15 / 23.413	- / -	- / -	0 / 0.000	40 / 95.602
FY 2021	- / -	- / -	- / -	0 / 1.044	0 / 0.000	0 / 1.044	0 / 15.183	13 / 28.861	18 / 28.815	- / -	0 / 0.000	31 / 73.903
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 3.169	0 / 10.387	4 / 8.443	10 / 18.504	8 / 17.849	22 / 58.352
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.207	1 / 2.940	0 / 1.329	11 / 17.203	12 / 23.679
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 4.202	11 / 20.782	11 / 24.984
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.428	22 / 16.791	22 / 17.219
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	57 / 131.100	57 / 131.100
Total	- / -	- / -	0 / 15.629	10 / 33.577	0 / 0.000	10 / 33.577	21 / 55.813	28 / 64.868	23 / 40.198	10 / 24.463	109 / 203.725	201 / 438.273

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	10	2	2	6	11	3	2	9	14	-	5	6	11	3	1	2	4	109	200
Out	-	-	-	-	-	-	-	-	-	-	-	-	8	2	3	7	-	11	5	3	9	5	7	8	5	8	3	3	3	110	200

Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR SHORE SITES

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	3 / 0.494	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.494
FY 2020	- / -	- / -	- / -	4 / 6.674	0 / 0.000	4 / 6.674	2 / 3.434	- / -	- / -	- / -	0 / 0.000	6 / 10.108
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 1 / DC001 - SPS-73 RADAR
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DC001 - SPS-73 RADAR

Installation Information

Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR SHORE SITES

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total	- / -	3 / 0.494	- / -	4 / 6.674	0 / 0.000	4 / 6.674	2 / 3.434	- / -	- / -	- / -	0 / 0.000	9 / 10.602

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

Footnotes:

(5) Non-Recurring Engineering (NRE) funding is required to accelerate updating the aging and obsolete SPS-73 to the Next Generation Surface Search Radar (NGSSR) configuration, which will address Cyber and Electro-magnetic Warfare threats that did not exist at the time of the original SPS-73 design. NRE funds will be utilized for government efforts to finalize NGSSR specifications, including design/cost trade-offs to assess different features that could affect cost/schedule such as dual system installations, track fusion, tactical training, AEGIS and SSDS combat system interfaces, and cybersecurity. FY19 funding for system procurements was decreased to fully fund the qualification units and associated NRE as a completion task. NRE is required through FY20 to mitigate FAC/FIAC and cybersecurity shortfalls, and to capitalize on periscope detection and discrimination capabilities. Funding will also complete software development, finalize NGSSR hardware configuration and conduct combat system integration and testing. Qualification testing includes navigation radar International Maritime Organization (IMO) and Safety Of Life At Sea (SOLAS) compliance, Periscope Detection and Discrimination (PDD) interface, Combat System Interface validation, Surface Search Radar validation, cybersecurity, shock, Electromagnetic interference (EMI) and environmental.

(6) NGSSR production units will be procured as a result of the October 2017 Commander Fleet Forces Comprehensive Review which is a priority requirement that is directly related to the McCain and Fitzgerald collisions. FY19 funding for system procurements was decreased to fully fund the qualification units and associated NRE in FY19 as a completion task. The installation profile was revised to align with the procurement profile. Contract award of the FY19 system procurements was deferred from FY19 to FY20 due to the requirement to procure the qualification units and associated material with FY19 funding vice FY18 funding as initially planned. The FY19 systems will be awarded with the FY20 systems. Since FY 2020 President's Budget request, FY21-FY25 system procurements decreased due to increased estimated per unit procurement cost and installation cost (the FY20 procurements remained at quantity 40 and the cost per system was adjusted to reflect this increase). Associated following year installs were reduced due to funding reductions and requirement for additional qualification unit funding. Installation funding for AP and planning yard DSA is customarily required up to 2 years prior to the year of installation to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules. Total cost for installations shows both current year installation funding for the quantity of installations in addition to AP and planning yard DSA for current year and/or following year installs.

(7) Additional shore site installations were added to the fielding plan in FY20 in response to a fleet request to increase the number of training facilities for navigation training as well as increasing the number of combat system integration lab installations for AEGIS and SSDS development.

(8) Production Support funding is required for production of hardware and hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). This funding also includes support for cybersecurity compliance and software certification. Production Support funding increased in FY19-FY23 due to demands of qualification unit production support required, ramp up to full rate production and sustainment training/familiarization of navigation and maintainer functions of the NGSSR.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 1 / DC001 - SPS-73 RADAR
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(9) Miscellaneous ECP support is required to address hardware and software obsolescence/availability issues which requires research and investigation by the ISEA to locate, test, and provide suitable substitutes to maintain Fleet Navigation Readiness and Safety of Life at Sea (SOLAS). It is also required for NGSSR integration and testing. Miscellaneous ECP funding will continue to be required for SPS-73 efforts throughout the outyears until sufficient quantities of NGSSR are fielded, reducing the burden of the legacy systems. Miscellaneous ECP funding supports the NGSSR schedule and the SPS-73 legacy systems as required.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	328.995	5.648	9.076	7.042	0.000	7.042	1.024	2.029	0.950	0.969	4.675	360.408
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	328.995	5.648	9.076	7.042	0.000	7.042	1.024	2.029	0.950	0.969	4.675	360.408
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**328.995**	**5.648**	**9.076**	**7.042**	**0.000**	**7.042**	**1.024**	**2.029**	**0.950**	**0.969**	**4.675**	**360.408**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPS-48G 3-D Air Surveillance Radar is a follow-on to the existing AN/SPS-48E onboard Aircraft Carriers and large-deck Amphibious ships. AN/SPS-48G was initiated in response to Fleet complaints regarding AN/SPS-48E reliability and supportability. Upgrade of the AN/SPS-48E with the AN/SPS-48G remains a high Fleet priority as it will reduce Operation and Support (O&S) costs and improve Operational Availability. Both factors are cited by the Fleet as unsatisfactory for the AN/SPS-48E. The goal is to replace the AN/SPS-48E as rapidly as possible so the Fleet can realize this cost avoidance. Current efforts include the manufacturing of the AN/SPS-48G upgrade kits with associated production support as well as modifications to the AN/SPS-48G brought about by initial Fleet introduction and Fleet operations. Production lead time is 24 months for the initial unit with subsequent units delivered at two month intervals after initial delivery. Equipment delivery for installation is required thirty days prior to FMP availability start in accordance with Navy Modernization Process Management. Engineering Change Order funding is required to address Fleet recommended modifications/requirements and Information Assurance, Obsolescence, and Diminishing Manufacturing Sources (DMS) issues. Engineering Change Proposal funding is required to initiate incorporation of High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change needs to be translated into the different hardware and software architectures of the AN/SPS-48G. FY18 was the last year of AN/SPS-48G procurements.

Installation funding for advanced planning (AP) and planning yard design services allocation (DSA) is required up to one year prior to the year of installation. DSA funds are used for Ship Installation Drawings (SIDs), Alteration Installation Team (AIT) contracting fees, and shipchecks. The FY17 $4M reduction to installation has resulted in movement of LHA 6 to outside the FYDP and LPD 22 to FY21. LPD 20 was moved from FY21 to FY23 and LPD 18 was moved from FY22 to "To Complete" due to ships' schedules.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Models of Systems Affected: AN/SPS-48G **Modification Type:** TBD **Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)												
B Kits												
Recurring												
1.1.1) AN/SPS-48G HARDWARE - FMP - NonOrganic (10)	25 / 156.609	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 156.609
1.1.2) EQUIPMENT NONRECURRING - Organic	- / 11.191	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 11.191
1.1.3) ENGINEERING CHANGE PROPOSALS - Organic (11)	- / 20.516	- / 0.461	- / 0.441	- / 0.442	- / -	- / 0.442	- / -	- / -	- / -	- / -	- / -	- / 21.860
1.1.4) ENGINEERING CHANGE ORDERS - Organic	- / 56.088	- / 0.579	- / 0.561	- / 0.475	- / -	- / 0.475	- / -	- / -	- / -	- / -	- / -	- / 57.703
1.1.5) AN/SPS-48G HARDWARE - NON-FMP - NonOrganic	2 / 12.973	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 12.973
Subtotal: Recurring	*- / 257.377*	*- / 1.040*	*- / 1.002*	*- / 0.917*	*- / -*	*- / 0.917*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 260.336*
Subtotal: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)	*27 / 257.377*	*- / 1.040*	*- / 1.002*	*- / 0.917*	*- / -*	*- / 0.917*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*27 / 260.336*
Subtotal: Procurement, All Modification Items	*- / 257.377*	*- / 1.040*	*- / 1.002*	*- / 0.917*	*- / -*	*- / 0.917*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 260.336*
Support *(All Modification Items)*												
2.1) PRODUCTION SUPPORT (12)	- / 25.053	- / 0.384	- / 0.342	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 25.779
Subtotal: Support	*- / 25.053*	*- / 0.384*	*- / 0.342*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 25.779*
Installation												
Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)	- / 46.565	- / 4.224	- / 7.732	- / 6.125	- / 0.000	- / 6.125	- / 1.024	- / 2.029	- / 0.950	- / 0.969	- / 4.675	- / 74.293
Subtotal: Installation	*- / 46.565*	*- / 4.224*	*- / 7.732*	*- / 6.125*	*- / -*	*- / 6.125*	*- / 1.024*	*- / 2.029*	*- / 0.950*	*- / 0.969*	*- / 4.675*	*- / 74.293*
Total												
Total Cost (Procurement + Support + Installation)	**328.995**	**5.648**	**9.076**	**7.042**	**0.000**	**7.042**	**1.024**	**2.029**	**0.950**	**0.969**	**4.675**	**360.408**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

Manufacturer Information

Manufacturer Name: Exelis | Manufacturer Location: VAN NUYS, CA

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 24

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/SPS-48G HARDWARE - FMP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	15 / 42.199	1 / 4.224	3 / 7.732	3 / 6.125	0 / 0.000	3 / 6.125	0 / 1.024	1 / 2.029	0 / 0.950	0 / 0.969	2 / 4.675	25 / 69.927
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	15 / 42.199	1 / 4.224	3 / 7.732	3 / 6.125	0 / 0.000	3 / 6.125	0 / 1.024	1 / 2.029	0 / 0.950	0 / 0.969	2 / 4.675	25 / 69.927

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	15	-	-	-	1	-	-	1	2	-	-	1	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	25
Out	11	-	-	-	1	-	-	1	2	-	-	2	1	1	-	1	-	1	1	-	-	-	-	-	-	-	-	1	-	2	25

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

Installation Information

Method of Implementation: AIT:: Installation Name: AN/SPS-48G HARDWARE - NON-FMP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 4.366	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.366
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 4.366	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.366

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

Footnotes:

(10) Installation funding for Advanced Planning (AP) and Planning Yard Design Services Allocation (DSA) is required up to one year prior to the year of installation. DSA funds are used for Ship Installation Drawings (SIDs), Alteration Installation Team (AIT) contracting fees, and shipchecks. The installation costs are variable per hull across the FYDP, with the difference being primarily the AP and DSA costs which are variable based on a combination of the number of future installations and the result of coast wide bidding resulting in uncertainty in location and cost.

(11) Engineering Change Proposal funding is primarily to incorporate High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change now needs to be translated into the different hardware and software architectures of the AN/SPS-48G.

(12) Production Support provides for Government oversight of production, Government and Original Equipment Manufacturer (OEM) support of production related software and hardware problems, and engineering as well as Integrated Logistics Support (ILS) efforts in support of production and fielding.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	8.793	1.262	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.055
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	8.793	1.262	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.055
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**8.793**	**1.262**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**10.055**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides real-time volunumeric wind profiles, convective weather detection/display, and radar refractivity assessments from AN/SPY-1 radar returns. TEP is an adjunct processor and display, tapping radar data from weather and refractivity data, with users able to access information through Secret Internet Protocol Router (SIPR). Funding for TEP ends in FY19. FY19 funding is being used to remove equipment and closeout program.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: TACTICAL ENVIRONMENTAL PROCESSOR (TEP)	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)												
B Kits												
Recurring												
1.1.1) DDG HARDWARE - FMP - NonOrganic (13)	8 / 2.317	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 2.317
1.1.2) DDG COTS REFRESH - Organic	- / 0.130	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.130
1.1.3) TEP SHORE SITES HARDWARE - NonOrganic	3 / 0.499	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.499
Subtotal: Recurring	*- / 2.946*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.946*
Subtotal: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)	*11 / 2.946*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*11 / 2.946*
Subtotal: Procurement, All Modification Items	*- / 2.946*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 2.946*
Support *(All Modification Items)*												
2.1) PRODUCTION SUPPORT	- / 5.132	- / 1.042	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.174
Subtotal: Support	*- / 5.132*	*- / 1.042*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 6.174*
Installation												
Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)	- / 0.715	- / 0.220	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.935
Subtotal: Installation	*- / 0.715*	*- / 0.220*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 0.935*
Total												
Total Cost (Procurement + Support + Installation)	**8.793**	**1.262**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**10.055**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)

Manufacturer Information

Manufacturer Name: BASIC COMMERCE AND INDUSTRIES, INC
Manufacturer Location: MOORESTOWN, NJ
Administrative Leadtime *(in Months)*: 0
Production Leadtime *(in Months)*: 11

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: AIT:: Installation Name: DDG HARDWARE - FMP

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 0.570	0 / 0.220	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.790
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	6 / 0.570	0 / 0.220	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.790

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	4	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)

Installation Information

Method of Implementation: [none specified]:: Installation Name: TEP SHORE SITES HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	3 / 0.145	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.145
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 0.145	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.145

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

Footnotes:

(13) FY20-FY25 funding zero'd due to higher priority requirement for resources. Directed to terminate program and remove DDG equipment. Funding reallocated to execute program closeout and equipment removal.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	84.050	24.816	26.492	28.152	0.000	28.152	16.646	16.590	56.532	57.642	287.501	598.421
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	84.050	24.816	26.492	28.152	0.000	28.152	16.646	16.590	56.532	57.642	287.501	598.421
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**84.050**	**24.816**	**26.492**	**28.152**	**0.000**	**28.152**	**16.646**	**16.590**	**56.532**	**57.642**	**287.501**	**598.421**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

DC018 AN/SPY-1 RM&A IMPROVEMENTS - These Reliability, Maintainability, and Availability (RM&A) improvements are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/SPY-1 Radar Total Ownership Cost (TOC) reductions. The improvements include, but are not limited to, installation for Sidewall Capacitor Circuit Protection and 10kW Traveling Wave Tube (TWT) Monitoring Circuits Ordnance Alterations (ORDALTS) for AN/SPY-1; B (V), D, D (V), CG and DDGs. Solid State Switch Assemblies (SSSA) will replace legacy switch tube modulator deck via an ORDALT. Multi-Mission Signal Processor (MMSP) is the signal processor for the AN/SPY-1 radar. MMSP Refresh (MMSP-R) cabinets will be procured to provide production representative configurations for land-based testing and training to support AEGIS ships at AEGIS Training and Readiness Center (ATRC) and Surface Combat System Center (SCSC) Wallops Island. Procurement and installation of SSSA for DDG Ships, Shore Sites and Spares are aligned with the DDG Modernization availability periods.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/SPY-1 RM&A IMPROVEMENTS	**Modification Type:** TBD	**Related RDT&E PEs:** 0604501N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS												
B Kits												
Recurring												
1.1.1) SIDEWALL AND 10KW TWT DDG HARDWARE - NonOrganic	62 / 7.883	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 7.883
1.1.2) PACK UP KITS - Organic	3 / 4.125	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.125
1.1.3) SIDEWALL AND 10KW TWT CG HARDWARE - NonOrganic (14)	16 / 3.536	2 / 0.371	4 / 0.727	2 / 0.186	- / -	2 / 0.186	- / -	- / -	- / -	- / -	- / -	24 / 4.820
1.1.4) SIDEWALL AND 10KW TWT SHORE SITE HARDWARE - NonOrganic	8 / 1.172	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 1.172
1.1.5) SOLID STATE SWITCH ASSEMBLY DDG HARDWARE - NonOrganic (15)	6 / 29.533	- / -	3 / 14.580	4 / 19.793	- / -	4 / 19.793	2 / 10.084	2 / 10.180	10 / 47.114	10 / 48.527	38 / 186.200	75 / 366.011
1.1.6) SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE - NonOrganic	2 / 8.216	3 / 14.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 22.640
1.1.7) SOLID STATE SWITCH ASSEMBLY SPARES - Organic (16)	12 / 6.252	6 / 2.997	9 / 5.184	- / -	- / -	- / -	2 / 1.186	- / -	10 / 5.775	8 / 5.026	28 / 19.635	75 / 46.055
1.1.8) SOLID STATE SWITCH ASSEMBLY FINAL POWER AMPLIFIER ENV/QUAL - Organic	1 / 1.876	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.876
1.1.9) MMSP-R SHORE SITE HARDWARE - NonOrganic	2 / 10.005	- / 0.005	- / 0.005	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 10.015
1.1.10) TEST EQUIPMENT - NonOrganic (17)	- / -	- / 2.204	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.204
Subtotal: Recurring	*- / 72.598*	*- / 20.001*	*- / 20.496*	*- / 19.979*	*- / -*	*- / 19.979*	*- / 11.270*	*- / 10.180*	*- / 52.889*	*- / 53.553*	*- / 205.835*	*- / 466.801*
Subtotal: DC018 - AN/SPY-1 RM&A IMPROVEMENTS	*112 / 72.598*	*11 / 20.001*	*16 / 20.496*	*6 / 19.979*	*- / -*	*6 / 19.979*	*4 / 11.270*	*2 / 10.180*	*20 / 52.889*	*18 / 53.553*	*66 / 205.835*	*255 / 466.801*
Subtotal: Procurement, All Modification Items	*- / 72.598*	*- / 20.001*	*- / 20.496*	*- / 19.979*	*- / -*	*- / 19.979*	*- / 11.270*	*- / 10.180*	*- / 52.889*	*- / 53.553*	*- / 205.835*	*- / 466.801*
Support *(All Modification Items)*												
2.1) PRODUCTION SUPPORT (18)	- / 6.134	- / 0.952	- / 1.136	- / 0.728	- / -	- / 0.728	- / 1.257	- / 1.373	- / 1.076	- / 1.487	- / 6.941	- / 21.084
Subtotal: Support	*- / 6.134*	*- / 0.952*	*- / 1.136*	*- / 0.728*	*- / -*	*- / 0.728*	*- / 1.257*	*- / 1.373*	*- / 1.076*	*- / 1.487*	*- / 6.941*	*- / 21.084*
Installation												
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS	- / 5.318	- / 3.863	- / 4.860	- / 7.445	- / 0.000	- / 7.445	- / 4.119	- / 5.037	- / 2.567	- / 2.602	- / 74.725	- / 110.536

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/SPY-1 RM&A IMPROVEMENTS	**Modification Type:** TBD	**Related RDT&E PEs:** 0604501N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Subtotal: Installation	- / 5.318	- / 3.863	- / 4.860	- / 7.445	- / -	- / 7.445	- / 4.119	- / 5.037	- / 2.567	- / 2.602	- / 74.725	- / 110.536
Total												
Total Cost (Procurement + Support + Installation)	**84.050**	**24.816**	**26.492**	**28.152**	**0.000**	**28.152**	**16.646**	**16.590**	**56.532**	**57.642**	**287.501**	**598.421**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Manufacturer Information

Manufacturer Name: SIDEWALL AND 10KW TWT ORDALTs - RAYTHEON — Manufacturer Location: Chesapeake, VA

Administrative Leadtime *(in Months)*: 0 — Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Aug 2019	Mar 2020	Mar 2021				
Delivery Dates	Aug 2020	Mar 2021	Mar 2022				

Manufacturer Name: SOLID STATE SWITCH ASSEMBLY (SSSA) - RAYTHEON — Manufacturer Location: Andover, MA

Administrative Leadtime *(in Months)*: 0 — Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Nov 2019	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates		May 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025	Sep 2026

Manufacturer Name: MMSP-R DIGITAL CABINETS - LOCKHEED MARTIN — Manufacturer Location: Moorestown, NJ

Administrative Leadtime *(in Months)*: 0 — Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT DDG HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	46 / 3.095	7 / 0.802	9 / 0.677	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	62 / 4.574
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	46 / 3.095	7 / 0.802	9 / 0.677	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	62 / 4.574

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Installation Information

Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT DDG HARDWARE

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	46	-	-	8	-	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62
Out	46	-	-	-	8	-	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62

Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT CG HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	10 / 1.029	4 / 0.486	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 1.515
FY 2019	- / -	- / -	4 / 0.439	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.439
FY 2020	- / -	- / -	- / -	4 / 0.407	0 / 0.000	4 / 0.407	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.407
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.275	- / -	- / -	- / -	0 / 0.000	2 / 0.275
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	10 / 1.029	4 / 0.486	4 / 0.439	4 / 0.407	0 / 0.000	4 / 0.407	2 / 0.275	- / -	- / -	- / -	0 / 0.000	24 / 2.636

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	10	4	-	-	-	-	-	-	4	-	-	4	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Out	10	-	-	-	2	-	-	2	-	-	-	4	4	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	24

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Installation Information

Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT SHORE SITE HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	8 / 0.074	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.074
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 0.074	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.074

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY DDG HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	0 / 0.609	3 / 3.704	3 / 3.627	0 / 0.000	3 / 3.627	- / -	- / -	- / -	- / -	0 / 0.000	6 / 7.940
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.844	- / -	- / -	- / -	0 / 0.000	3 / 3.844
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 5.037	- / -	- / -	0 / 0.000	4 / 5.037
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.567	- / -	0 / 0.000	2 / 2.567
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.602	0 / 0.000	2 / 2.602
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 13.171	10 / 13.171
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 13.421	10 / 13.421

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Installation Information

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY DDG HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 48.133	38 / 48.133
Total	- / -	0 / 0.609	3 / 3.704	3 / 3.627	0 / 0.000	3 / 3.627	3 / 3.844	4 / 5.037	2 / 2.567	2 / 2.602	58 / 74.725	75 / 96.715

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	1	-	2	-	1	-	2	2	-	1	-	1	1	1	1	1	1	-	-	-	1	-	1	58	75
Out	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	1	-	2	-	2	-	1	1	1	1	1	1	1	60	75

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	1 / 1.120	1 / 1.228	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.348
FY 2019	- / -	- / -	- / -	3 / 3.411	0 / 0.000	3 / 3.411	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.411
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	1 / 1.120	1 / 1.228	- / -	3 / 3.411	0 / 0.000	3 / 3.411	- / -	- / -	- / -	- / -	0 / 0.000	5 / 5.759

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Installation Information

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	1	-	-	1	-	-	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Out	1	-	-	-	-	1	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5

Method of Implementation: AIT:: Installation Name: MMSP-R SHORE SITE HARDWARE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	2 / 0.738	0 / 0.040	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.778
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	2 / 0.738	0 / 0.040	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.778

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

Method of Implementation (Organic): PACK UP KITS **Installation Quantity:** 3

Method of Implementation (Organic): SOLID STATE SWITCH ASSEMBLY SPARES **Installation Quantity:** 75

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS		
Installation Information		
Method of Implementation (Organic): SOLID STATE SWITCH ASSEMBLY FINAL POWER AMPLIFIER ENV/QUAL	**Installation Quantity:** 1	

Footnotes:

(14) Sidewall and 10KW ORDALT kits costs vary depending on ship and radar configurations and the mix of 10KW TWT monitoring circuit and Sidewall Capacitor kits. FY22 Sidewall Cap and 10KW TWT CG hardware procurement was shifted to FY21 to avoid gap in production and startup cost in FY22. These installations were adjusted to match procurement timeline.

(15) SSSA land-based sites integration issues have led to deferring FY19 SSSA procurements, as well FY19 ship installations. FY19 SSSA procurement and installation funding was reprogrammed to a higher priority program. SSSA ship installation will start in FY20. In FY19, $609K due to sunk costs required for SSSA production startup prior to installations moving to FY20.

(16) SSSA Spares include initial spares through Material Support Date (MSD) and INCOs which are required for installations. Spares quantities for FY19, FY21 and FY22 were adjusted based on the consumption of spares procured in prior years.

(17) Test Equipment is required to support SSSA repair at the Original Equipment Manufacturer's (OEM) Depot.

(18) Production support includes installation engineering services, Integrated Logistics Support (ILS) documentation updates, ORDALT instructions, engineering change proposals and Diminishing Manufacturing Sources and Material Shortages (DMSMS) analysis.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 5 / DC024 - AMDR Operations and Support (O&S)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** P384	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	1.828	0.000	1.828	3.920	6.997	33.700	39.443	5,576.933	5,662.821
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	1.828	0.000	1.828	3.920	6.997	33.700	39.443	5,576.933	5,662.821
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**1.828**	**0.000**	**1.828**	**3.920**	**6.997**	**33.700**	**39.443**	**5,576.933**	**5,662.821**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

DC024 AMDR Operations and Support (O&S) - AMDR has been designated the AN/SPY-6(V)1 to address Ballistic Missile Defense (BMD) and Air Defense (AD) capability gaps identified in the Maritime Air and Missile Defense of Joint Forces (MAMDJF) Initial Capabilities Document (ICD); AN/SPY-6(V)1 will be initially fielded on the DDG-51 FLT-III platform. A variant of the AN/SPY-6(V) will replace the AN/SPY-1 radar on existing DDG 51 FLT-IIA ships. The AN/SPY-6(V) Product Support Strategy established NSWC Port Hueneme Division as the Product Support Integrator (PSI) for overall system Operational Availability (AO) and Backend Processing (BEP) subsystem(s) Life Cycle Support. The BEP is comprised of Commercial off the Shelf (COTS) x86 based Modular Open System Architecture (MOSA), allowing for Form-Fit-Function (FFF) replacement with next generation server and processer technology. A Product Support Provider (PSP), defined in the LCSP and Acquisition Strategy, as the Advanced Processing System (APS) contract vendor will execute Supply Support of the BEP. The APS PSP contributes to overall system readiness by managing BEP repair/replacement, obsolescence, and technology refresh by attrition within a performance based service contract, leveraging AN/SPY-6(V)'s MOSA and COTS x86 industrial base. Funding will sustain the Navy's next generation family of radars, AN/SPY-6(V). This applies to all current and future variants of the AN/SPY-6(V); including future modifications or separate programs to address different mission areas and utilization onboard different ship classes.

The "To Complete" is represented of the AN/SPY-6(V)1's full 40 year life cycle across 22 ship years (880 ship years).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 5 / DC024 - AMDR Operations and Support (O&S)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** P384	
Models of Systems Affected: AMDR Operations and Support (O&S)	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DC024 - AMDR Operations and Support (O&S)												
B Kits												
Recurring												
1.1.1) BACKEND EQUIPMENT SUSTAINMENT - Organic (19)	- / -	- / -	- / -	- / 1.828	- / -	- / 1.828	- / 3.920	- / 6.997	- / 9.431	- / 12.822	- / 2,342.312	- / 2,377.310
1.1.2) TECHNOLOGY BASELINE MODERNIZATION - Organic (20)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 24.269	- / 26.621	- / 3,234.621	- / 3,285.511
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 1.828*	*- / -*	*- / 1.828*	*- / 3.920*	*- / 6.997*	*- / 33.700*	*- / 39.443*	*- / 5,576.933*	*- / 5,662.821*
Subtotal: DC024 - AMDR Operations and Support (O&S)	*- / -*	*- / -*	*- / -*	*- / 1.828*	*- / -*	*- / 1.828*	*- / 3.920*	*- / 6.997*	*- / 33.700*	*- / 39.443*	*- / 5,576.933*	*- / 5,662.821*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / 1.828*	*- / -*	*- / 1.828*	*- / 3.920*	*- / 6.997*	*- / 33.700*	*- / 39.443*	*- / 5,576.933*	*- / 5,662.821*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**1.828**	**0.000**	**1.828**	**3.920**	**6.997**	**33.700**	**39.443**	**5,576.933**	**5,662.821**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 5 / DC024 - AMDR Operations and Support (O&S)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:** P384	
Modification Item 1 of 1: DC024 - AMDR Operations and Support (O&S)		

Footnotes:

(19) Backend Equipment Sustainment funding is for performance based repair, replacement, and sparing of BEP hardware and management of obsolescence via attrition, required to achieve the systems readiness requirements.

(20) Technology Baseline Modernization Funds configuration modernization every 7 years; incrementally refreshes COTS x86 BEP not already refreshed through attrition and non-COTS BEP required to maintain configuration baseline and align with industry standards and infrastructure.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 6 / DC025 - SPEIR BLOCK I
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.195	24.471	27.259	1,189.430	1,265.355
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.195	24.471	27.259	1,189.430	1,265.355
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**24.195**	**24.471**	**27.259**	**1,189.430**	**1,265.355**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

SPEIR Block I will provide a common EO/IR Electronic Support (ES) capability to all surface ships that will passively find, fix, track, and target current / emerging threats in support of the following warfare missions: Navigation, Counter Fast Attack Craft (FAC) / Fast In-shore Attack Craft (FIAC), Counter Unmanned Aircraft Systems (UAS) / Unmanned Aerial Vehicle (UAV), and Anti-Ship Cruise Missile (ASCM) Defense. SPEIR Block I will consist of a passive Wide Field of View (WFOV) capability with a 360 degree field-of-view optical sensor for panoramic detection, tracking, and identification for 24/7 day/night shipboard situational awareness. SPEIR Block I will also include an enhanced, high resolution Narrow Field of View (NFOV) and laser system capability that will provide range-finding and precision 3D target tracking. SPEIR Block II will be a future program that will build on Block I and add capability for Periscope Detection and Discrimination (PDD) and Mine Like Object (MLO) avoidance. Development Status/Major Milestones are: Milestone B, procurement of Long Lead Material (LLM) and Milestone C Low Rate Initial Production (LRIP). The acquisition strategy for the FY23 LRIP units is to procure Long Lead Material (LLTM) for one shore site and one Fleet unit, with the completion of the FY23 LRIPs being awarded at MS C planned for 3QFY24.

There will be three configurations for the SPEIR Block I system: 1.1.1 SPEIR Block I provides funding for DDG 51, CG, LCS and LPD class ships and also consists of the WFOV, NFOV and laser capability. 1.1.2 SPEIR Block I Scaled is for CVN, LHD and LHA class ships. The scaled configuration will provide the WFOV capability and will be integrated with existing NFOV capability on these classes of ships. 1.1.3 is the SPEIR Shore Site configuration. The shore site configuration is a partial configuration specifically to support shore based training and testing.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 6 / DC025 - SPEIR BLOCK I
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:** 0604501N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: DC025 - SPEIR BLOCK I												
B Kits												
Recurring												
1.1.1) SPEIR BLOCK I - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 11.579	1 / 11.243	- / -	84 / 433.989	86 / 456.811
1.1.2) SPEIR BLOCK I - SCALED - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 14.384	12 / 52.628	14 / 67.012
1.1.3) NON-FMP SPEIR SHORE SITE - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 9.314	- / -	- / -	- / -	1 / 9.314
1.1.4) INCO SPARES - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.167	- / 1.237	- / 1.079	- / 13.624	- / 17.107
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 22.060*	*- / 12.480*	*- / 15.463*	*- / 500.241*	*- / 550.244*
Subtotal: DC025 - SPEIR BLOCK I	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*2 / 22.060*	*1 / 12.480*	*2 / 15.463*	*96 / 500.241*	*101 / 550.244*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 22.060*	*- / 12.480*	*- / 15.463*	*- / 500.241*	*- / 550.244*
Support *(All Modification Items)*												
2.1) PRODUCTION SUPPORT (PS)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.618	- / 2.435	- / 2.553	- / 17.538	- / 23.144
2.2) TECH REFRESH	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 40.480	- / 40.480
2.3) ENGINEERING CHANGE PROPOSALS (ECP)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.054	- / 1.079	- / 11.040	- / 13.173
Subtotal: Support	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.618*	*- / 3.489*	*- / 3.632*	*- / 69.058*	*- / 76.797*
Installation												
Modification Item 1 of 1: DC025 - SPEIR BLOCK I	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.517	- / 8.502	- / 8.164	- / 620.131	- / 638.314
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 1.517*	*- / 8.502*	*- / 8.164*	*- / 620.131*	*- / 638.314*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**24.195**	**24.471**	**27.259**	**1,189.430**	**1,265.355**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 6 / DC025 - SPEIR BLOCK I

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: DC025 - SPEIR BLOCK I

Manufacturer Information

Manufacturer Name: TBD | Manufacturer Location: TBD

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 18

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates					Mar 2023	Apr 2024	Apr 2025
Delivery Dates					Sep 2024	Oct 2025	Oct 2026

Installation Information

Method of Implementation: [none specified]:: Installation Name: SPEIR BLOCK I

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.874	1 / 5.025	- / -	0 / 0.000	1 / 5.899
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.643	0 / 0.235	1 / 5.125	0 / 0.000	1 / 6.003
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.339	84 / 557.334	84 / 558.673
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.517	1 / 5.260	1 / 6.464	84 / 557.334	86 / 570.575

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	84	86
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	85	86

Method of Implementation: [none specified]:: Installation Name: SPEIR BLOCK I - SCALED

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 6 / DC025 - SPEIR BLOCK I
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DC025 - SPEIR BLOCK I

Installation Information

Method of Implementation: [none specified]:: Installation Name: SPEIR BLOCK I - SCALED

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.897	0 / 0.327	2 / 7.321	2 / 8.545
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.373	12 / 55.476	12 / 56.849
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.897	0 / 1.700	14 / 62.797	14 / 65.394

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	14
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	14

Method of Implementation: [none specified]:: Installation Name: NON-FMP SPEIR SHORE SITE

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.345	- / -	0 / 0.000	1 / 2.345
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.345	- / -	0 / 0.000	1 / 2.345

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	**P-1 Line Item Number / Title:** 2980 / Items less than $5 Million	**Modification Number / Title:** 6 / DC025 - SPEIR BLOCK I
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: DC025 - SPEIR BLOCK I

Installation Information

Method of Implementation: [none specified]:: Installation Name: NON-FMP SPEIR SHORE SITE

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	55.169	43.196	47.811	56.106	0.000	56.106	69.643	64.378	63.026	64.019	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	55.169	43.196	47.811	56.106	0.000	56.106	69.643	64.378	63.026	64.019	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**55.169**	**43.196**	**47.811**	**56.106**	**0.000**	**56.106**	**69.643**	**64.378**	**63.026**	**64.019**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.598	0.444	1.001	-	1.001	0.833	0.722	0.756	1.700	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is required for National Command and Control capability. Funding provides for the procurement and installation of Integrated Waveform (IW) and Mobile User Objective System (MUOS) Digital Modular Radio (DMR) systems and IW and MUOS upgrade kits. DMR with IW and MUOS hardware is a four-channel software defined radio that provides satellite communications, Line of Sight (LOS) and High Frequency (HF), Very High Frequency (VHF) and Ultra High Frequency (UHF) communication capability to surface, submarine, and shore facilities. This variant of the DMR, including upgrade kits, provides hardware with IW/MUOS capability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-3a	1 / (DN 110) DMR IW and MUOS Systems (TBD)				- / 44.188	- / 29.365	- / 32.857	- / 28.814	- / 0.000	- / 28.814
P-3a	2 / (DN 111) DMR IW and MUOS Upgrade Kits (TBD)				- / 10.981	- / 13.831	- / 14.954	- / 27.292	- / 0.000	- / 27.292
P-40	**Total Gross/Weapon System Cost**				**- / 55.169**	**- / 43.196**	**- / 47.811**	**- / 56.106**	**- / 0.000**	**- / 56.106**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-3a	1 / (DN 110) DMR IW and MUOS Systems (TBD)				- / 53.632	- / 52.323	- / 56.439	- / 59.033	Continuing	Continuing
P-3a	2 / (DN 111) DMR IW and MUOS Upgrade Kits (TBD)				- / 16.011	- / 12.055	- / 6.587	- / 4.986	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 69.643**	**- / 64.378**	**- / 63.026**	**- / 64.019**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY21 funding request was reduced by $5.522 million to account for the availability of prior year execution balances.

The FY 2021 funding provides for the procurement of 10 DMR IW & MUOS Systems and 15 DMR IW & MUOS Upgrade Kits, and 52 installations (16 Afloat Systems, 9 Shore Systems, and 27 Upgrade Kits). In addition, FY 2021 includes funding to implement cybersecurity upgrades and cryptographic modernization to increase system performance and security for fielded DMRs.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	44.188	29.365	32.857	28.814	0.000	28.814	53.632	52.323	56.439	59.033	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	44.188	29.365	32.857	28.814	0.000	28.814	53.632	52.323	56.439	59.033	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**44.188**	**29.365**	**32.857**	**28.814**	**0.000**	**28.814**	**53.632**	**52.323**	**56.439**	**59.033**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Integrated Waveform (IW) and Mobile User Objective System (MUOS) Digital Modular Radio (DMR) Systems. Quantities between radios and kits may change from year to year as a result of ship availabilities and fleet priority.

[DMR IW and MUOS System Procurement - Afloat] FY 2021 funding provides for ten (10 QTY) DMR IW & MUOS afloat systems.

DMR IW & MUOS system annual unit cost variances for procurements and installations are driven by system configurations. There are 3 different DMR IW & MUOS System afloat configurations (2 surface & 1 subsurface) and 5 different DMR IW & MUOS Upgrade Kit afloat configurations (3 surface & 2 subsurface). Additionally, shore sites do not have a standard configuration and are unique to each individual shore site. For shore, the budget reflects individual radios vice afloat configurations.

For the DMR IW & MUOS System, the configuration ranges from 1 - 3 DMR radios and requires a unique set of ancillary equipment dependent upon ship class (racks, power amplifiers & antenna upgrades). For example, a CVN requires 3 DMR radios and would need 4 racks to complete installation. When compared to a DDG, which needs only 1 DMR radio and 2 racks to complete installation. One (1) DMR system will range in cost depending on the type of configuration and Economic Order Quantity Pricing relevant at time of contract award.

The nineteen (19) month Production Lead Time (PLT) for DMR System delivery is due to varying PLT's from multiple ancillary equipment vendors that are then integrated into the final product. Ancillary equipment is provided to Naval Information Warfare Center (NIWC) Pacific for integration, assembly and test. The seven (7) month Administrative Lead Time (ALT) for DMR System procurements allows for the identification and receipt of other customer funds in order to take advantage of favorable quantity pricing.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/USC-61(C)	**Modification Type:** TBD	**Related RDT&E PEs:** 0604280N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems												
B Kits												
Recurring												
1.1.1) DMR IW and MUOS System Procurement - Afloat - NonOrganic [1]	20 / 19.871	16 / 25.902	5 / 19.179	10 / 11.104	- / -	10 / 11.104	18 / 35.814	13 / 27.912	3 / 10.890	1 / 1.226	Continuing	Continuing
1.1.2) DMR IW and MUOS System Procurement - Shore - NonOrganic	16 / 15.640	- / -	6 / 6.583	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
1.1.3) DMR LOS System Procurement (DDG) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 12.147	4 / 24.944	2 / 12.694	- / -	8 / 49.785
1.1.4) DMR LOS System Procurement (CVN) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 18.810	Continuing	Continuing
1.1.5) DMR Safety of Flight Procurement - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.779	Continuing	Continuing
Subtotal: Recurring	*- / 35.511*	*- / 25.902*	*- / 25.762*	*- / 11.104*	*- / -*	*- / 11.104*	*- / 35.814*	*- / 40.059*	*- / 35.834*	*- / 39.509*	*Continuing*	*Continuing*
Subtotal: (DN 110) DMR IW and MUOS Systems	*36 / 35.511*	*16 / 25.902*	*11 / 25.762*	*10 / 11.104*	*- / -*	*10 / 11.104*	*18 / 35.814*	*15 / 40.059*	*7 / 35.834*	*9 / 39.509*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 35.511*	*- / 25.902*	*- / 25.762*	*- / 11.104*	*- / -*	*- / 11.104*	*- / 35.814*	*- / 40.059*	*- / 35.834*	*- / 39.509*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) DMR IW and MUOS System Production Support	- / 3.557	- / 1.520	- / 1.289	- / 0.444	- / -	- / 0.444	- / 1.477	- / 2.106	- / 1.682	- / 1.907	Continuing	Continuing
2.2) DMR IW and MUOS System DSA [2]	- / 1.160	- / 0.356	- / 3.367	- / 4.722	- / -	- / 4.722	- / 2.830	- / 3.687	- / 4.213	- / 3.087	Continuing	Continuing
Subtotal: Support	*- / 4.717*	*- / 1.876*	*- / 4.656*	*- / 5.166*	*- / -*	*- / 5.166*	*- / 4.307*	*- / 5.793*	*- / 5.895*	*- / 4.994*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems	- / 3.960	- / 1.587	- / 2.439	- / 12.544	- / 0.000	- / 12.544	- / 13.511	- / 6.471	- / 14.710	- / 14.530	Continuing	Continuing
Subtotal: Installation	*- / 3.960*	*- / 1.587*	*- / 2.439*	*- / 12.544*	*- / -*	*- / 12.544*	*- / 13.511*	*- / 6.471*	*- / 14.710*	*- / 14.530*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**44.188**	**29.365**	**32.857**	**28.814**	**0.000**	**28.814**	**53.632**	**52.323**	**56.439**	**59.033**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems

Manufacturer Information

Manufacturer Name: General Dynamics | Manufacturer Location: Scottsdale, Arizona

Administrative Leadtime *(in Months)*: 7 | Production Leadtime *(in Months)*: 19

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019	May 2020	May 2021				
Delivery Dates	Sep 2020	Dec 2021	Dec 2022				

Installation Information

Method of Implementation: [none specified]:: Installation Name: DMR IW and MUOS System Procurement - Afloat

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	6 / 2.160	4 / 1.587	3 / 1.719	7 / 4.417	0 / 0.000	7 / 4.417	- / -	- / -	- / -	- / -	0 / 0.000	20 / 9.883
FY 2019	- / -	- / -	- / -	9 / 5.679	0 / 0.000	9 / 5.679	7 / 7.308	- / -	- / -	- / -	0 / 0.000	16 / 12.987
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	4 / 4.176	1 / 0.719	- / -	- / -	0 / 0.000	5 / 4.895
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 5.752	2 / 5.254	- / -	0 / 0.000	10 / 11.006
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 9.456	6 / 4.908	Continuing	Continuing
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 7.362	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	6 / 2.160	4 / 1.587	3 / 1.719	16 / 10.096	0 / 0.000	16 / 10.096	11 / 11.484	9 / 6.471	14 / 14.710	15 / 12.270	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	1	1	1	1	-	-	1	2	1	2	5	8	6	3	-	2	1	1	4	3	2	6	4	2	6	3	3	3	Cont.	Cont.
Out	6	-	1	1	1	1	-	-	1	2	1	2	5	8	6	3	-	2	1	1	4	3	2	6	4	2	6	3	3	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems

Installation Information

Method of Implementation: [none specified]:: Installation Name: DMR IW and MUOS System Procurement - Shore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 1.800	- / -	3 / 0.720	9 / 2.448	0 / 0.000	9 / 2.448	2 / 0.507	- / -	- / -	- / -	0 / 0.000	16 / 5.475
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.520	- / -	- / -	- / -	0 / 0.000	6 / 1.520
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	2 / 1.800	- / -	3 / 0.720	9 / 2.448	0 / 0.000	9 / 2.448	8 / 2.027	- / -	- / -	- / -	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	-	3	-	2	4	3	3	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.
Out	2	-	-	-	-	-	-	-	-	3	-	2	4	3	3	-	2	3	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.

Method of Implementation: [none specified]:: Installation Name: DMR LOS System Procurement (DDG)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.260	0 / 0.000	2 / 2.260
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems

Installation Information

Method of Implementation: [none specified]:: Installation Name: DMR LOS System Procurement (DDG)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.260	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	6	8
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	6	8

Method of Implementation: [none specified]:: Installation Name: DMR LOS System Procurement (CVN)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems

Installation Information

Method of Implementation: [none specified]:: Installation Name: DMR LOS System Procurement (CVN)

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.

Method of Implementation: [none specified]:: Installation Name: DMR Safety of Flight Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.

Footnotes:

(1) a) The combination of configurations purchased in FY 2021 gives the appearance of an average unit cost decrease. FY 2021 is procuring 4 less large deck (LCC/LHD/CVN) systems than in FY 2020 ($3.890 million/system). Large-deck platforms require 3 Digital modular Radios (DMR) and have more associated ancillary equipment required, compared to 1 DMR radio for all other configurations. b) Due to late

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 1 / (DN 110) DMR IW and MUOS Systems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

contract definitization, the FY 2018 procurement was delayed and occurred at the same time with the FY 2019 procurement in February 2019. Following a 19-month lead time and production delivery schedule, these procurements will be installing in FY 2021. c) The FY2021 installation unit cost increases due to the combination of configurations being installed.

(2) Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include system operational verification tests (SOVT) and system drawings closeout requirements. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year. In FY 2021, $1.163 million funds SOVTs and design closeout for sixteen (16) FY 2021 installations, $2.955 million funds the pre-installation planning for eleven (11) FY 2022 installations, and $0.604 million funds the SOVT and design closeout for three (3)FY 2021 shore installations.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 2 / (DN 111) DMR IW and MUOS Upgrade Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	10.981	13.831	14.954	27.292	0.000	27.292	16.011	12.055	6.587	4.986	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	10.981	13.831	14.954	27.292	0.000	27.292	16.011	12.055	6.587	4.986	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**10.981**	**13.831**	**14.954**	**27.292**	**0.000**	**27.292**	**16.011**	**12.055**	**6.587**	**4.986**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is required for National Command and Control capability. Integrated Waveform (IW) and Mobile User Objective System (MUOS) Digital Modular Radio (DMR) Upgrade Kits. Quantities between radios and kits may change from year to year as a result of ship availabilities and fleet priority.

[DMR IW and MUOS Upgrade Kits Procurement] FY 2021 funding provides for fifteen (15 QTY) DMR IW & MUOS afloat upgrade kits. In addition, Engineering Change Orders (ECOs) are required to implement cybersecurity upgrades and cryptographic modernization to increase system performance and security for fielded Digital Modular Radios (DMRs).

DMR IW & MUOS upgrade kit annual unit cost variances for procurements and installations are driven by system configurations. There are 3 different DMR IW & MUOS System afloat configurations (2 surface & 1 subsurface) and 5 different DMR IW & MUOS Upgrade Kit afloat configurations (3 surface & 2 subsurface). Additionally, shore sites do not have a standard configuration and are unique to each individual shore site. For shore, the budget reflects individual radios vice afloat configurations.

For the DMR IW & MUOS Upgrade Kit, the configuration ranges from 1 - 3 DMR upgrade kits and requires a unique set of ancillary equipment dependent upon ship class (racks, power amplifiers & antenna upgrades). DMR upgrade kit cost will vary depending on the type of configuration and Economic Order Quantity Pricing relevant at time of contract award.

The twelve (12) month Production Lead Time (PLT) for DMR Upgrade Kit delivery is due to varying PLT's from multiple ancillary equipment vendors that are then integrated into the final product. Ancillary equipment is provided to Naval Information Warfare Center (NIWC) Pacific, formally SPAWAR Systems Center (SSC) Pacific, for integration, assembly and test. The seven (7) month Administrative Lead Time (ALT) for DMR Upgrade Kit procurements allows for the identification and receipt of other customer funds in order to take advantage of favorable quantity pricing.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 2 / (DN 111) DMR IW and MUOS Upgrade Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: AN/USC-61(C)	**Modification Type:** TBD	**Related RDT&E PEs:** 0604280N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits												
B Kits												
Recurring												
1.1.1) DMR IW and MUOS Upgrade Kits Procurement - NonOrganic (3)	19 / 6.797	16 / 7.635	16 / 5.098	15 / 5.094	- / -	15 / 5.094	13 / 5.900	9 / 2.342	5 / 1.193	1 / 0.417	Continuing	Continuing
1.1.2) Engineering Change Orders (ECOs) - Organic (4)	- / 2.958	- / 3.481	- / 4.938	- / 2.913	- / -	- / 2.913	- / -	- / -	- / -	- / -	- / -	- / 14.290
Subtotal: Recurring	*- / 9.755*	*- / 11.116*	*- / 10.036*	*- / 8.007*	*- / -*	*- / 8.007*	*- / 5.900*	*- / 2.342*	*- / 1.193*	*- / 0.417*	*Continuing*	*Continuing*
Subtotal: (DN 111) DMR IW and MUOS Upgrade Kits	*19 / 9.755*	*16 / 11.116*	*16 / 10.036*	*15 / 8.007*	*- / -*	*15 / 8.007*	*13 / 5.900*	*9 / 2.342*	*5 / 1.193*	*1 / 0.417*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 9.755*	*- / 11.116*	*- / 10.036*	*- / 8.007*	*- / -*	*- / 8.007*	*- / 5.900*	*- / 2.342*	*- / 1.193*	*- / 0.417*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) DMR IW and MUOS Upgrade Kits Production Support	- / 0.364	- / 0.382	- / 0.255	- / 0.204	- / -	- / 0.204	- / 0.260	- / 0.141	- / 0.048	- / 0.021	Continuing	Continuing
2.2) DMR IW and MUOS Upgrade Kits DSA (5)	- / 0.862	- / 0.415	- / 3.141	- / 2.746	- / -	- / 2.746	- / 1.861	- / 1.079	- / 0.909	- / 0.317	Continuing	Continuing
Subtotal: Support	*- / 1.226*	*- / 0.797*	*- / 3.396*	*- / 2.950*	*- / -*	*- / 2.950*	*- / 2.121*	*- / 1.220*	*- / 0.957*	*- / 0.338*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits	- / 0.000	- / 1.918	- / 1.522	- / 16.335	- / 0.000	- / 16.335	- / 7.990	- / 8.493	- / 4.437	- / 4.231	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / 1.918*	*- / 1.522*	*- / 16.335*	*- / -*	*- / 16.335*	*- / 7.990*	*- / 8.493*	*- / 4.437*	*- / 4.231*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**10.981**	**13.831**	**14.954**	**27.292**	**0.000**	**27.292**	**16.011**	**12.055**	**6.587**	**4.986**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 2 / (DN 111) DMR IW and MUOS Upgrade Kits

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits

Manufacturer Information

Manufacturer Name: General Dynamics | Manufacturer Location: Scottsdale, Arizona

Administrative Leadtime *(in Months)*: 4 | Production Leadtime *(in Months)*: 19

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019						
Delivery Dates	Sep 2020						

Manufacturer Name: General Dynamics (6) | Manufacturer Location: Scottsdale, Arizona

Administrative Leadtime *(in Months)*: 7 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		May 2020	May 2021				
Delivery Dates		May 2021	May 2022				

Installation Information

Method of Implementation: Method:: Installation Name: DMR MUOS Upgrade Kits

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	5 / 1.918	3 / 1.522	11 / 6.655	0 / 0.000	11 / 6.655	- / -	- / -	- / -	- / -	0 / 0.000	19 / 10.095
FY 2019	- / -	- / -	- / -	16 / 9.680	0 / 0.000	16 / 9.680	- / -	- / -	- / -	- / -	0 / 0.000	16 / 9.680
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	16 / 7.520	- / -	- / -	- / -	0 / 0.000	16 / 7.520
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.470	14 / 6.258	- / -	- / -	0 / 0.000	15 / 6.728
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.235	8 / 3.227	- / -	0 / 0.000	13 / 5.462
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.210	3 / 2.539	0 / 0.000	6 / 3.749
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 1.692	Continuing	Continuing
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	5 / 1.918	3 / 1.522	27 / 16.335	0 / 0.000	27 / 16.335	17 / 7.990	19 / 8.493	11 / 4.437	7 / 4.231	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3010 / Shipboard Tactical Comms	**Modification Number / Title:** 2 / (DN 111) DMR IW and MUOS Upgrade Kits
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits

Installation Information

Method of Implementation: Method:: Installation Name: DMR MUOS Upgrade Kits

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	2	2	-	1	-	3	-	-	2	7	8	10	5	7	5	-	7	7	3	2	1	7	-	3	1	2	-	4	Cont.	Cont.
Out	-	-	2	2	-	1	-	3	-	1	2	7	8	9	5	7	5	-	7	7	3	2	1	7	-	3	1	2	-	Cont.	Cont.

Footnotes:

(3) a) Unit Cost variances for procurements are driven by afloat upgrade kit configurations and ancillary equipment (racks, power amplifiers & antenna upgrades), which is dependent upon ship class. There are 5 different Digital Modular Radio (DMR) Integrated Waveform (IW) & Mobile User Objective System (MUOS) Upgrade Kit afloat configurations (3 surface & 2 subsurface) where each configuration ranges from 1 - 3 DMR upgrade kits and a unique set of ancillary equipment. b) Due to late contract definitization, the FY 2018 procurement was delayed and occurred at the same time with the FY 2019 procurement in February 2019. Following a 19-month lead time and production delivery schedule, these procurements will be installing in FY 2021.

(4) Engineering Change Orders (ECOs) include Win 10 and cryptographic modernization. FY 2019-2021 procures and installs Win 10 upgrades and performs associated integration, assembly and test. FY 2019-2021 includes engineering changes associated with cryptographic modernization as directed by National Security Agency (NSA). DMRs current embedded cryptographic systems will no longer be able to communicate securely after Crypto Keys expire due to cease key dates as directed by NSA. In order to ensure warfighters continued secure (i.e. encrypted) communications, DMRs must modernize their cryptographic capabilities by implementing the latest algorithms.

(5) Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year. In FY 2021, $1.098 million funds SOVTs and design closeout for twenty-seven (27) FY 2021 installations.

(6) Production lead time for upgrade kits is reduced from 19 months to 12 month due to completion of non-recurring costs in FY19.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204163N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	714.937	109.152	128.728	124.288	0.000	124.288	97.272	98.452	90.786	92.668	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	714.937	109.152	128.728	124.288	0.000	124.288	97.272	98.452	90.786	92.668	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**714.937**	**109.152**	**128.728**	**124.288**	**0.000**	**124.288**	**97.272**	**98.452**	**90.786**	**92.668**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.062	1.005	1.783	-	1.783	1.632	1.114	2.086	1.884	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship Communication Automation (52PQ): With the evolution of afloat networks programs migrating into the Consolidated Afloat Networks and Enterprise Services (CANES) program , the Ship Communications Automation budget line will continue to support Automated Digital Network System (ADNS), Legacy Network Operation Rolling Tide (ORT), Tactical Messaging (formerly Command and Control Official Information eXchange (C2OIX)), Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching) and Piers / Enterprise Pier Connectivity Architecture (EPCA) programs.

Automated Digital Network System (ADNS): ADNS provides cyber hardened warfighting critical, afloat to shore wide area networking. Capabilities include routing, switching, baseband, configuration and monitoring capabilities that interconnect Fleet tactical and coalition partner enclaves worldwide. ADNS leverages Commercial Off-the-Shelf/ Government Off-the-Shelf (COTS/GOTS) equipment and network protocols as specified by the joint technical architecture and in support of meeting the ability to connect in a range of contested battlespace environments in support of expanding the Fleets digital competitive advantage. ADNS Increment (INC) I provides ship to shore Internet Protocol (IP) connectivity, separation of enclaves, reuse of unused enclave bandwidth, and ship to tactical shore IP connectivity. ADNS INC II provides capabilities of network to Satellite Communications, Load Balancing, Radio Frequency (RF) restoral, and Quality of Service (QoS) to include application prioritization, Traffic Management, compression and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS INC III combines all Navy Tactical Voice, secure Communications Interoperability Protocol Inter-Working Function, Video, data requirements into a converged IP data stream, and Assured Command and Control (C2) capabilities. This includes Secure Communication Interoperability-Protocol Interworking Function (SCIP-IWF) for secure telephony over IP. In addition, the INC III architecture will incorporate an IPv4/IPv6 dual stack and a Cipher-Text security architecture to align to the Global Information Grid (GIG) in order to mesh Navy tactical surface, subsurface, airborne platforms, and Aegis Ashore sites into a single IP environment with gateway functions to joint and coalition networks. Technical Insertions (TI) are minor upgrades to existing system hardware and software baseline that are required to maximize Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) capability and interface functionality between ADNS and applicable programs.

Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT): ORT is a Navy-wide cyber remediation effort to secure government databases and improve the overall security protocols for Navy computer networks. Specifically, Legacy Network Cyber Resiliency/ORT will fund planned legacy network upgrades and mitigate security vulnerabilities on the highest End of Life (EOL) platforms that are not targeted to be replaced by a CANES system. These upgrades will mitigate known targeted cyber vulnerabilities and include eradication of old Windows Operating Systems, critical EOL firewalls and routers and improved anti-malware solutions. Legacy Network Cyber Resiliency/ORT will improve the networks ability to detect known and unknown vulnerabilities and attacks by upgrading sensor and monitoring technologies and accelerating post-attack containment and recovery.

Piers / Enterprise Pier Connectivity Architecture (EPCA): Commander Pacific Fleet, Commander United States Naval European Command and Commander United States Naval Central Command have declared pier Information Technology (IT) infrastructure modernization to be a Force Protection matter of urgency. A fully capable and modern Enterprise pier IT infrastructure allows United States (US) Naval ships, while

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0204163N
Line Item MDAP/MAIS Code: N/A		

pier-side at 26 global locations (15 Continental United States (CONUS)/11 Outside Continental United States (OCONUS)), to secure their Radio Frequency (RF) systems for critical maintenance, perform battle force training, while continuing to send and receive operational and intelligence traffic. This element of the BLII program installs state-of-the-art, Automated Digital Network System compatible IT infrastructure to Navy operated piers worldwide, including public and commercial shipyards and authorized Department of Navy (DON) foreign ports. EPCA provides expanded Non-Classified Internet Protocol Router Network (NIPRNET)/ Secret Internet Protocol Router Network (SIPRNET) capability to piers to meet Fleet Commander stated requirements in order to maintain situational awareness related to anti-terrorist military operations. Further, it ensures bandwidth requirements are met in order to download critical security patches and updates required for ships to maintain proper Information Assurance (IA) security posture. While in port, ships are connected by either an Umbilical Cable Assembly (UCA) or a Wireless solution from the skin of the ship to the first Navy Network Operations Center (NOC). Beginning in FY20, Piers/EPCA transitions from LI 8164 Navy/Marine Corps Intranet (NMCI) OCONUS (OCONUS Piers Technical Refresh) to LI 3050 Ship Communications Automation.

Tactical Messaging (formerly Command and Control Official Information eXchange (C2OIX)), provides exchange of Joint Top Secret and below Official Information of high precedence Command and Control (C2) as well as routine organizational record message traffic between ashore sites and afloat platforms. Tactical Messaging provides sustainment and modernization for messaging systems on over 320 United States Navy (USN), Military Sealift Command (MSC) and United States Coast Guard (USCG) afloat platforms and 4 USN shore communications stations. The Tactical Messaging modernization effort for afloat platforms replaces the legacy, multi-rack, Naval Modular Automated Communication System (NAVMACS) with a modern, single-rack NAVMACS II system that automates and increases the speed and efficiency of handling organizational message traffic aboard ships and submarines. NAVMACS II leverages the Internet Protocol (IP) networks to send and receive organizational messages during normal operations and interfaces with non-IP serial SATCOM paths to provide resilient C2 traffic during IP outages and Emission Control (EMCON) operations. C2OIX is the shore component of Tactical Messaging that handles UNCLASSIFIED, SECRET and TOP SECRET message service. C2OIX also provides an integrated Cross Domain Solution (CDS) for over 2,500 shore commands throughout the Navy shore enterprise and over 320 USN, MSC and USCG afloat platforms. C2OIX is located at the two Naval Computer Telecommunication Area Master Stations (NCTAMS PACIFIC and NCTAMS ATLANTIC) to provide worldwide coverage for shore commands via the terrestrial networks. These suites also provide organizational message data for satellite uplink for afloat units operating in the Atlantic Ocean and Continental United States (CONUS) areas of operation. Additionally, there are partial C2OIX suites located at two Naval Computer and Telecommunications Station sites (NCTS GUAM and NCTS NAPLES) to provide organizational message data for satellite uplink for units operating in the Indian Ocean and Western Pacific areas of operation. Tactical Messaging satisfies shore and afloat Navy organizational messaging requirements and implements products that are developed with an open system architecture that allow organizational message exchange between the Navy and other Services and Agencies.

Shore Tactical Assured Command and Control (STACC) is the Navy's Program of Record to consolidate, replace and modernize the ashore wide area network services infrastructure with a cyber-hardened, warfighting resilient hardware, software and enterprise services infrastructure to enable information warfare from and within the tactical domain to expand the Fleets digital competitive advantage. STACC delivers Command, Control, Communications, Computers, and Intelligence (C4I) capabilities that provides the Navy's Command and Control (C2) connection between globally deployed tactical warfighting forces - ships, submarines and aircraft, and key decision makers ashore (Numbered Fleet Commanders and Coalition partners). STACC provides this tactical connectivity through ashore network infrastructure that includes Fleet Network Operation Centers (FLTNOCs), Maritime Operation Centers (MOCs) and DOD Gateways and Teleport sites directly enabling Distributed Maritime Operations worldwide. STACC network provides email, chat, Domain Name System (DNS), and patching applications to afloat platforms in a tactical environment to all deployed warfighting assets across all security classification levels enclaves (UNCLASSIFIED, SECRET, SECRET RELEASABLE (SECREL), VSE, and SCI).

STACC supports Fleet CDRs and Shore C2 users by globally connecting and consolidating common services, enabling resiliency, deploying resilient C2, and proactive network defense through separate and severable "tactical level" network from the "business" network (NMCI, ONE-NET) connecting "afloat" networks such as Integrated Shipboard Network Systems (ISNS)/Consolidated Afloat Networks Enterprise Services (CANES). Unlike NMCI and ONE-NET, STACC is operated and managed by the military allowing for custom network controls, custom COTS/GOTS solutions, increased protection for critical C2 as well as failover capability within a denied environment.

STACC provides and maintains several infrastructure systems essential for the entire Fleet to communicate end-to-end by providing a gateway for the tactical communities by incorporating the latest technologies into an integrated portfolio of products and services that facilitate effective C2 across the force. STACC supports 63 shore sites and over 410 surface and subsurface platforms in both CONUS and OCONUS locations (Maritime Operations Centers (MOC), Commander Task Force (CTF), Navy Computer Telecommunications Area Master Stations (NCTAMS), Naval Computer Telecommunications Stations (NCTS) and Detachments, and Broadcast Control Authorities (BCA)).

The STACC portfolio includes:

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0204163N
Line Item MDAP/MAIS Code: N/A		

Fleet Network Operation Centers (FLTNOC) and Sensitive Compartmented Information network Operation Centers (SCI NOC) which provide "tactical" level" networking (IP routing, traffic management, cyber monitoring/protection, storage, and computing) and hosting for multiple critical C4I applications and collaboration tools (Global Command and Control Services - Joint and Maritime (GCCS-J/M), BMD, ISR, Chat, email, etc.) used by Fleet Commanders to provide command and control of deployed forces.

Virtual Secure Enclave (VSE) provides a resilient C2 network (separate and severable SECRET path from the Tactical SIPRNET) designed to survive in a highly contested cyber environment and assure secure C2 communications between our shore Fleet command elements and the deployed warfighters. VSE is a thin-client architecture residing at the Naval Operation Centers (NOCs). VSE provides secure and resilient C2 network capability for specific Fleet prioritized warfighting commands (e.g., MOC, CTF, etc.) and provides critical C2 applications at the operational level of war in denied environment scenarios. VSE provides secure and resilient application hosting, transport, and authenticated role based access for "tactical" operations.

Combined Enterprise Regional Information Exchange System Maritime (CENTRIXS-M) ashore is a collection of Coalition Classified SECREL networks (separate and severable path) used for coalition (non-US) interoperability in support of military operations. The STACC CENTRIXS-M separates and connects the MOCs, Fleet units, and Expeditionary units to various foreign partner bi-lateral and multilateral coalitions (e.g., NATO). This is a critical element of STACC allowing for collaboration and communication with coalition forces during operations.

Transport provides physical end-point connections from ships and submarines to the shore tactical infrastructure; ensuring the network traffic path is transparent to the operators. Transport is critical for providing the secure physical connectivity between shore locations.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** 0204163N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Ship Communications Automation	P-5a			- / 107.779	- / 6.965	- / 2.900	- / 2.900	- / 0.000	- / 2.900
P-3a	1 / PQ065 Tactical Messaging (TBD)				- / 133.947	- / 9.323	- / 8.525	- / 4.361	- / 0.000	- / 4.361
P-3a	2 / PQ069 Automated Digital Network System (ADNS) - Afloat (TBD)				- / 135.833	- / 63.408	- / 65.943	- / 65.270	- / 0.000	- / 65.270
P-3a	3 / PQ070 Shore Tactical Assured Command and Control (STACC) (TBD)				- / 337.378	- / 29.456	- / 41.474	- / 41.692	- / 0.000	- / 41.692
P-3a	4 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA) (TBD)				- / 0.000	- / 0.000	- / 9.886	- / 10.064	- / 0.000	- / 10.064
P-40	**Total Gross/Weapon System Cost**				**- / 714.937**	**- / 109.152**	**- / 128.728**	**- / 124.288**	**- / 0.000**	**- / 124.288**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Ship Communications Automation	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / PQ065 Tactical Messaging (TBD)				- / 4.465	- / 4.593	- / 4.480	- / 4.516	Continuing	Continuing
P-3a	2 / PQ069 Automated Digital Network System (ADNS) - Afloat (TBD)				- / 57.557	- / 60.789	- / 58.243	- / 58.724	Continuing	Continuing
P-3a	3 / PQ070 Shore Tactical Assured Command and Control (STACC) (TBD)				- / 21.984	- / 19.572	- / 14.408	- / 15.694	Continuing	Continuing
P-3a	4 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA) (TBD)				- / 10.366	- / 10.598	- / 10.755	- / 10.834	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 97.272**	**- / 98.452**	**- / 90.786**	**- / 92.668**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

In FY21, Automated Digital Network System (ADNS) continues integration of Assured Command and Control capabilities to meet fleet requirements as well as fielding at Aegis Ashore sites. In FY21, ADNS funds are for the procurement of (40) Increment (INC) III Afloat units, (51) INC III Afloat Technical Insertion (TI) units, (4) Ashore INC I/INC II units, and (6) Ashore INC III units (to include one Aegis Ashore system), with integration, and associated costs for pre-installation design. In addition, the FY21 ADNS investment will fund installation of (34) INC III Afloat units, (51) INC III Afloat TI units, (4) Ashore INC I/INC II units, and (6) Ashore INC III units.

In FY21, Piers / Enterprise Pier Connectivity Architecture (EPCA) will procure (3) and install (3) EPCA units pier side to address pier Information Technology (IT) infrastructure modernization in support of Force Protection matter of urgency. Funds will support pre-installation design, site surveys, procurement of hardware and software, production support, and installation of Piers IT infrastructure.

In FY21, Tactical Messaging will procure (10), and install & integrate (10) NAVMACS Afloat units. Associated costs for pre-installation design to replace old legacy equipment onboard ships and submarines. FY21 increase in average installation cost is due to limited CANES aligned installations.

In FY21, STACC will engineer, procure and integrate (26) STACC Equipment upgrades and perform (27)installations. Upgrades will expand Virtual Secure Enclave (VSE) and CENTRIXS-M infrastructure to support additional Maritime Operation Center (MOC) users, as well as their Commander Task Forces (CTF) in support of the Resilient Command and Control (C2) initiative. FY21 funding will engineer, integrate,

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0204163N
Line Item MDAP/MAIS Code: N/A		

procure, and install hardware and software to expand VSE user capacity by 1750 in order to support specific operation plans, adding critical C2 applications for MOC and Commander Task Forces (CTF) users for operation in contested environment situations and provide failover capabilities. In FY21, the capability will be expanded across (10) additional sites in the Pacific and Atlantic regions.

In FY21, funding for STACC will also engineer, integrate, procure, and install hardware and software for resiliency to: transition legacy serial transport to an IP environment; expand IP services (UNCLASSIFIED, SECRET, CENTRIXS-M, and SCI) to include application hosting services and expanded storage capability; and enhance Network Operations monitoring and management, provide cyber remediation solutions to detect, deter and mitigate network threats and for Assured Command and Control to support terrestrial communications and routing changes.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Item Number / Title [DODIC]:** 1 / Ship Communications Automation
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	107.779	6.965	2.900	2.900	0.000	2.900
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	107.779	6.965	2.900	2.900	0.000	2.900
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**107.779**	**6.965**	**2.900**	**2.900**	**0.000**	**2.900**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II(†) (1)	100.000	12	1.200	100.000	4	0.400	100.000	4	0.400	100.000	4	0.400	-	-	0.000	100.000	4	0.400
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III(†) (2)	420.833	24	10.100	416.667	6	2.500	416.667	6	2.500	416.667	6	2.500	-	-	0.000	416.667	6	2.500
1.1.3) Legacy Network Cyber Resiliency/ Operation Rolling Tide (ORT)(†)	803.992	120	96.479	508.125	8	4.065	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*107.779*	-	-	*6.965*	-	-	*2.900*	-	-	*2.900*	-	-	*0.000*	-	-	*2.900*
Subtotal: Hardware Cost	**-**	**-**	***107.779***	**-**	**-**	***6.965***	**-**	**-**	***2.900***	**-**	**-**	***2.900***	**-**	**-**	***0.000***	**-**	**-**	***2.900***
Gross/Weapon System Cost	**-**	**-**	**107.779**	**-**	**-**	**6.965**	**-**	**-**	**2.900**	**-**	**-**	**2.900**	**-**	**-**	**0.000**	**-**	**-**	**2.900**

(†) indicates the presence of a P-5a

Footnotes:

(1) Automated Digital Network System (ADNS): Tech refresh is required to field hardware to address End of Life issues at (4) ADNS Network Operation Centers (NOC): Naval Computer & Telecommunications Station (NCTS) Bahrain, Naval Computer & Telecommunications Area Master Station (NCTAMS) European and Central area of operation (EURCENT), NCTAMS LANT, and NCTAMS PAC sites.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Item Number / Title [DODIC]:** 1 / Ship Communications Automation
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(2) Automated Digital Network System (ADNS): FY19-25 procurement quantities represent minor tech refreshes at 6 sites that include 2 Broadcast Control Authority and 4 NOCs (NCTS Bahrain, NCTAMS EURCENT, NCTAMS LANT, and NCTAMS PAC). Increment (INC) III Ashore units require 3 months integration, assembly, testing and shipping after delivery, prior to installation start. Installs do not begin until 10 months after procurement contract award (7 months production lead time + 3 months integration).

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3050 / Ship Communications Automation	Item Number / Title [DODIC]: 1 / Ship Communications Automation

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2019	Naval Information Warfare Center (NIWC) [3] / San Diego, CA	C / IDIQ	NAVWAR	Nov 2018	Mar 2019	4	100.000	Y		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2020	Naval Information Warfare Center (NIWC) [3] / San Diego, CA	C / IDIQ	NAVWAR	Nov 2019	Mar 2020	4	100.000	Y		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2021	Naval Information Warfare Center (NIWC) [3] / San Diego, CA	C / IDIQ	NAVWAR	Nov 2020	Mar 2021	4	100.000	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2019	Naval Information Warfare Center (NIWC) / San Diego, CA	C / IDIQ	NAVWAR	Nov 2018	Sep 2019	6	416.667	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2020	Naval Information Warfare Center (NIWC) / San Diego, CA	C / IDIQ	NAVWAR	Nov 2019	Sep 2020	6	416.667	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2021	Naval Information Warfare Center (NIWC) / San Diego, CA	C / IDIQ	NAVWAR	Nov 2020	Sep 2021	6	416.667	Y		
1.1.3) Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)		2019	Naval Information Warfare Center (NIWC) / San Diego, CA	C / IDIQ	NAVWAR	Nov 2018	Mar 2019	8	508.125	Y		

Footnotes:

[3] Naval Information Warfare Center (NIWC) Pacific (PAC) is the procuring agency for Automated Digital Network Systems (ADNS) Ashore components and leverages multiple contract vehicles with various vendors.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 1 / PQ065 Tactical Messaging
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	133.947	9.323	8.525	4.361	0.000	4.361	4.465	4.593	4.480	4.516	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	133.947	9.323	8.525	4.361	0.000	4.361	4.465	4.593	4.480	4.516	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**133.947**	**9.323**	**8.525**	**4.361**	**0.000**	**4.361**	**4.465**	**4.593**	**4.480**	**4.516**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Tactical Messaging (formerly Command and Control Official Information eXchange (C2OIX)), provides exchange of Joint Top Secret and below Official Information of high precedence Command and Control (C2) as well as routine organizational record message traffic between ashore sites and afloat platforms. Tactical Messaging provides sustainment and modernization for messaging systems on over 320 United States Navy (USN), Military Sealift Command (MSC) and United States Coast Guard (USCG) afloat platforms and 4 USN shore communications stations. The Tactical Messaging modernization effort for afloat platforms replaces the legacy, multi-rack, Naval Modular Automated Communication System (NAVMACS) with a modern, single-rack NAVMACS II system that automates and increases the speed and efficiency of handling organizational message traffic aboard ships and submarines. NAVMACS II leverages the Internet Protocol (IP) networks to send and receive organizational messages during normal operations and interfaces with non-IP serial SATCOM paths to provide resilient C2 traffic during IP outages and Emission Control (EMCON) operations. C2OIX is the shore component of Tactical Messaging that handles UNCLASSIFIED, SECRET and TOP SECRET message service. C2OIX also provides an integrated Cross Domain Solution (CDS) for over 2,500 shore commands throughout the Navy shore enterprise and over 320 USN, MSC and USCG afloat platforms. C2OIX is located at the two Naval Computer Telecommunication Area Master Stations (NCTAMS PACIFIC and NCTAMS ATLANTIC) to provide worldwide coverage for shore commands via the terrestrial networks. These suites also provide organizational message data for satellite uplink for afloat units operating in the Atlantic Ocean and Continental United States (CONUS) areas of operation. Additionally, there are partial C2OIX suites located at two Naval Computer and Telecommunications Station sites (NCTS GUAM and NCTS NAPLES) to provide organizational message data for satellite uplink for units operating in the Indian Ocean and Western Pacific areas of operation. Tactical Messaging satisfies shore and afloat Navy organizational messaging requirements and implements products that are developed with an open system architecture that allow organizational message exchange between the Navy and other Services and Agencies.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 1 / PQ065 Tactical Messaging
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Tactical Messaging / C2OIX / NAVMACS	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: PQ065 Tactical Messaging												
B Kits												
Recurring												
1.1.1) Consolidated Prior Year Requirements - Organic	237 / 97.338	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	237 / 97.338
1.1.2) NAVMACS Equipment (Afloat) - NonOrganic [4]	60 / 12.939	63 / 4.537	34 / 2.448	10 / 1.713	- / -	10 / 1.713	9 / 1.137	10 / 1.997	10 / 1.883	10 / 1.881	Continuing	Continuing
1.1.3) C2OIX Equipment (Ashore) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.380	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Recurring	*- / 110.277*	*- / 4.537*	*- / 2.448*	*- / 1.713*	*- / -*	*- / 1.713*	*- / 1.517*	*- / 1.997*	*- / 1.883*	*- / 1.881*	*Continuing*	*Continuing*
Subtotal: PQ065 Tactical Messaging	*297 / 110.277*	*63 / 4.537*	*34 / 2.448*	*10 / 1.713*	*- / -*	*10 / 1.713*	*11 / 1.517*	*10 / 1.997*	*10 / 1.883*	*10 / 1.881*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 110.277*	*- / 4.537*	*- / 2.448*	*- / 1.713*	*- / -*	*- / 1.713*	*- / 1.517*	*- / 1.997*	*- / 1.883*	*- / 1.881*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Production Support	- / 8.658	- / 0.193	- / 0.193	- / 0.106	- / 0.000	- / 0.106	- / 0.100	- / 0.101	- / 0.101	- / 0.101	Continuing	Continuing
2.2) DSA	- / 8.120	- / 0.971	- / 1.241	- / 1.014	- / 0.000	- / 1.014	- / 0.256	- / 0.261	- / 0.262	- / 0.211	Continuing	Continuing
Subtotal: Support	*- / 16.778*	*- / 1.164*	*- / 1.434*	*- / 1.120*	*- / -*	*- / 1.120*	*- / 0.356*	*- / 0.362*	*- / 0.363*	*- / 0.312*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: PQ065 Tactical Messaging	- / 6.892	- / 3.622	- / 4.643	- / 1.528	- / 0.000	- / 1.528	- / 2.592	- / 2.234	- / 2.234	- / 2.323	Continuing	Continuing
Subtotal: Installation	*- / 6.892*	*- / 3.622*	*- / 4.643*	*- / 1.528*	*- / -*	*- / 1.528*	*- / 2.592*	*- / 2.234*	*- / 2.234*	*- / 2.323*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**133.947**	**9.323**	**8.525**	**4.361**	**0.000**	**4.361**	**4.465**	**4.593**	**4.480**	**4.516**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 1 / PQ065 Tactical Messaging
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: PQ065 Tactical Messaging

Manufacturer Information

Manufacturer Name: General Dynamics	Manufacturer Location: Taunton, MA
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 1

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019	Jan 2020	Jan 2021				
Delivery Dates	Mar 2019	Feb 2020	Feb 2021				

Installation Information

Method of Implementation: Method:: Installation Name: Installation of Equipment - NAVMACS Afloat

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	60 / 6.892	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	60 / 6.892
FY 2019	- / -	37 / 3.622	26 / 2.028	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	63 / 5.650
FY 2020	- / -	- / -	34 / 2.615	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	34 / 2.615
FY 2021	- / -	- / -	- / -	10 / 1.528	0 / 0.000	10 / 1.528	- / -	- / -	- / -	- / -	0 / 0.000	10 / 1.528
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	9 / 2.342	- / -	- / -	- / -	0 / 0.000	9 / 2.342
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.234	- / -	- / -	0 / 0.000	10 / 2.234
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.234	- / -	0 / 0.000	10 / 2.234
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.323	0 / 0.000	10 / 2.323
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	60 / 6.892	37 / 3.622	60 / 4.643	10 / 1.528	0 / 0.000	10 / 1.528	9 / 2.342	10 / 2.234	10 / 2.234	10 / 2.323	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	58	2	5	15	17	-	24	19	17	-	3	4	3	-	2	3	4	-	3	3	4	-	3	3	4	-	3	3	4	Cont.	Cont.
Out	58	2	5	15	17	-	24	19	17	-	3	4	3	-	2	3	4	-	3	3	4	-	3	3	4	-	3	3	4	Cont.	Cont.

Method of Implementation: Method:: Installation Name: Installation of Equipment - C2OIX Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 1 / PQ065 Tactical Messaging
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: PQ065 Tactical Messaging

Installation Information

Method of Implementation: Method:: Installation Name: Installation of Equipment - C2OIX Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.250	- / -	- / -	- / -	0 / 0.000	2 / 0.250
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.250	- / -	- / -	- / -	0 / 0.000	2 / 0.250

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2

Method of Implementation (Organic): Consolidated Prior Year Requirements - Not Installed

Installation Quantity: 237

Footnotes:

(4) FY21 unit cost increase is attributable to procuring Tech Refresh (TR) units whereas FY20 procurements were a mix of TR and Internal Equipment Modifications (IEM). TR units consist of more hardware/ components driving the average unit cost increase.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	135.833	63.408	65.943	65.270	0.000	65.270	57.557	60.789	58.243	58.724	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	135.833	63.408	65.943	65.270	0.000	65.270	57.557	60.789	58.243	58.724	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**135.833**	**63.408**	**65.943**	**65.270**	**0.000**	**65.270**	**57.557**	**60.789**	**58.243**	**58.724**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Automated Digital Network System (ADNS) is the gateway to the tactical Wide Area Network (WAN) afloat for Internet Protocol (IP) network operations, supporting information dissemination and external connectivity. ADNS allows services and applications to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) resources and pier connectivity. ADNS provides the only Quality and Class of Service (QoS/CoS) routing for Multi-Service Voice, Video, and Data domains across available Radio Frequency (RF) paths.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:** 0204163N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat												
B Kits												
Recurring												
1.1.1) Automated Digital Network System (ADNS) - Afloat- INC III - NonOrganic (5)	99 / 81.115	33 / 35.510	34 / 34.437	40 / 35.702	- / -	40 / 35.702	35 / 31.405	41 / 36.880	38 / 32.831	40 / 34.533	Continuing	Continuing
1.1.2) ADNS Tech Insertions - NonOrganic (6)	77 / 12.533	49 / 8.800	57 / 8.550	51 / 5.100	- / -	51 / 5.100	42 / 4.200	35 / 3.500	34 / 3.400	36 / 3.600	Continuing	Continuing
Subtotal: Recurring	*- / 93.648*	*- / 44.310*	*- / 42.987*	*- / 40.802*	*- / -*	*- / 40.802*	*- / 35.605*	*- / 40.380*	*- / 36.231*	*- / 38.133*	*Continuing*	*Continuing*
Subtotal: PQ069 Automated Digital Network System (ADNS) - Afloat	*176 / 93.648*	*82 / 44.310*	*91 / 42.987*	*91 / 40.802*	*- / -*	*91 / 40.802*	*77 / 35.605*	*76 / 40.380*	*72 / 36.231*	*76 / 38.133*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 93.648*	*- / 44.310*	*- / 42.987*	*- / 40.802*	*- / -*	*- / 40.802*	*- / 35.605*	*- / 40.380*	*- / 36.231*	*- / 38.133*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) ADNS - Production Support	- / 3.800	- / 1.900	- / 1.734	- / 1.690	- / -	- / 1.690	- / 1.538	- / 1.951	- / 1.652	- / 1.353	Continuing	Continuing
2.2) ADNS - DSA (7)	- / 4.908	- / 1.464	- / 3.098	- / 3.647	- / -	- / 3.647	- / 3.655	- / 3.876	- / 3.869	- / 2.760	Continuing	Continuing
Subtotal: Support	*- / 8.708*	*- / 3.364*	*- / 4.832*	*- / 5.337*	*- / -*	*- / 5.337*	*- / 5.193*	*- / 5.827*	*- / 5.521*	*- / 4.113*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat	- / 33.477	- / 15.734	- / 18.124	- / 19.131	- / 0.000	- / 19.131	- / 16.759	- / 14.582	- / 16.491	- / 16.478	Continuing	Continuing
Subtotal: Installation	*- / 33.477*	*- / 15.734*	*- / 18.124*	*- / 19.131*	*- / -*	*- / 19.131*	*- / 16.759*	*- / 14.582*	*- / 16.491*	*- / 16.478*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**135.833**	**63.408**	**65.943**	**65.270**	**0.000**	**65.270**	**57.557**	**60.789**	**58.243**	**58.724**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 2 / PQ069 Automated Digital Network System (ADNS) - Afloat

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat

Manufacturer Information

Manufacturer Name: Naval Informaiton Warfare Center (NIWC) -- San Diego, CA (Afloat ADNS Technical Insertion) | Manufacturer Location: San Diego, CA

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 1

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Nov 2018	Nov 2019	Nov 2020				
Delivery Dates	Dec 2018	Dec 2019	Dec 2020				

Manufacturer Name: VARIOUS (Afloat ADNS Inc III) (8) | Manufacturer Location: VARIOUS

Administrative Leadtime *(in Months)*: 1 | Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Nov 2018	Nov 2019	Nov 2020				
Delivery Dates	Jun 2019	Jun 2020	Jun 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: Automated Digital Network System (ADNS) - Afloat- INC III

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	67 / 28.741	32 / 12.654	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	99 / 41.395
FY 2019	- / -	- / -	33 / 14.362	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	33 / 14.362
FY 2020	- / -	- / -	- / -	34 / 15.561	0 / 0.000	34 / 15.561	- / -	- / -	- / -	- / -	0 / 0.000	34 / 15.561
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	40 / 13.819	- / -	- / -	- / -	0 / 0.000	40 / 13.819
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	35 / 12.132	- / -	- / -	0 / 0.000	35 / 12.132
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	41 / 14.111	- / -	0 / 0.000	41 / 14.111
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 13.958	0 / 0.000	38 / 13.958
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	67 / 28.741	32 / 12.654	33 / 14.362	34 / 15.561	0 / 0.000	34 / 15.561	40 / 13.819	35 / 12.132	41 / 14.111	38 / 13.958	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat

Installation Information

Method of Implementation: [none specified]:: Installation Name: Automated Digital Network System (ADNS) - Afloat- INC III

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	67	7	10	9	6	9	11	3	10	8	12	11	3	6	19	7	8	7	15	7	6	6	15	13	7	7	12	10	9	Cont.	Cont.
Out	65	2	7	10	9	12	7	8	2	13	4	14	10	3	7	18	9	8	6	16	6	7	7	13	14	7	5	13	10	Cont.	Cont.

Method of Implementation: [none specified]:: Installation Name: ADNS Tech Insertions

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	77 / 4.736	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	77 / 4.736
FY 2019	- / -	49 / 3.080	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	49 / 3.080
FY 2020	- / -	- / -	57 / 3.762	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	57 / 3.762
FY 2021	- / -	- / -	- / -	51 / 3.570	0 / 0.000	51 / 3.570	- / -	- / -	- / -	- / -	0 / 0.000	51 / 3.570
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	42 / 2.940	- / -	- / -	- / -	0 / 0.000	42 / 2.940
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	35 / 2.450	- / -	- / -	0 / 0.000	35 / 2.450
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	34 / 2.380	- / -	0 / 0.000	34 / 2.380
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	36 / 2.520	0 / 0.000	36 / 2.520
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	77 / 4.736	49 / 3.080	57 / 3.762	51 / 3.570	0 / 0.000	51 / 3.570	42 / 2.940	35 / 2.450	34 / 2.380	36 / 2.520	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	77	11	12	13	13	12	13	16	16	-	16	13	22	-	21	14	7	-	13	14	8	-	13	16	5	5	12	5	14	Cont.	Cont.
Out	68	13	13	9	13	10	12	14	17	14	-	16	14	21	-	22	14	6	-	13	16	6	-	14	17	3	6	12	4	Cont.	Cont.

Footnotes:

(5) Automated Digital Network System (ADNS) Increment (INC) III Afloat procurement cost range: $.5M - $1.5M; installation cost range: $.3M - $1.0M. Average unit cost fluctuations for procurement and installation are due to varying system configurations required for surface and submarine platforms. INC III units require 4 months integration, assembly, testing and shipping after delivery, prior to installation start. Installs do not begin until 12 months after procurement is initiated (1 month administrative lead time + 7 months production lead time + 4 months integration).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(6) FY21: Technical Insertions (TI) will be fielded to include hardware and software baseline updates to Afloat units required to maximize Command, Control, Communications, Computer, Intelligence, and Reconnaissance (C4ISR) capability and interface functionality between Automated Digital Network System (ADNS) and applicable Satellite Communications (SATCOM) systems such as Navy Multi-Band Terminal(NMT), Global Broadcast System(GBS) and Battle Force Tactical Network (BFTN). TI unit cost includes production engineering/integration requirements associated with the initial fielding of TI capability. TI(s) require (1) month administrative lead time and (1) month production lead time.

(7) Design Service Allocation (DSA) costs per unit fluctuates based on the type of platform (submarine vs Multi-purpose Aircraft Carrier, Nuclear -Propulsion (CVN)) and the type of system (Backfit vs new install) and can vary between $15K - $200K.

(8) ADNS: Full Production Contract has 4 possible vendors on Multiple Award Contract (MAC) award: SERCO, Inc, Science Applciations International Corporation (SAIC), DRS Laurel Technologies, and Leidos. Contract will be used for Increment III production units.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 3 / PQ070 Shore Tactical Assured Command and Control (STACC)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	337.378	29.456	41.474	41.692	0.000	41.692	21.984	19.572	14.408	15.694	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	337.378	29.456	41.474	41.692	0.000	41.692	21.984	19.572	14.408	15.694	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**337.378**	**29.456**	**41.474**	**41.692**	**0.000**	**41.692**	**21.984**	**19.572**	**14.408**	**15.694**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Shore Tactical Assured Command and Control (STACC) is the Navy's Program of Record to consolidate, replace and modernize the ashore wide area network services infrastructure with a cyber-hardened, warfighting resilient hardware, software and enterprise services infrastructure to enable information warfare from and within the tactical domain to expand the Fleets digital competitive advantage. STACC delivers Command, Control, Communications, Computers, and Intelligence (C4I) capabilities that provides the Navy's Command and Control (C2) connection between globally deployed tactical warfighting forces - ships, submarines and aircraft, and key decision makers ashore (Numbered Fleet Commanders and Coalition partners). STACC provides this tactical connectivity through ashore network infrastructure that includes Fleet Network Operation Centers (FLTNOCs), Maritime Operation Centers (MOCs) and DOD Gateways and Teleport sites directly enabling Distributed Maritime Operations worldwide. STACC network provides email, chat, Domain Name System (DNS), and patching applications to afloat platforms in a tactical environment to all deployed warfighting assets across all security classification levels enclaves (UNCLASSIFIED, SECRET, SECRET RELEASABLE (SECREL), VSE, and SCI).

STACC supports Fleet CDRs and Shore C2 users by globally connecting and consolidating common services, enabling resiliency, deploying resilient C2, and proactive network defense through separate and severable "tactical level" network from the "business" network (NMCI, ONE-NET) connecting "afloat" networks such as Integrated Shipboard Network Systems (ISNS)/Consolidated Afloat Networks Enterprise Services (CANES). Unlike NMCI and ONE-NET, STACC is operated and managed by the military allowing for custom network controls, custom COTS/GOTS solutions, increased protection for critical C2 as well as failover capability within a denied environment.

STACC provides and maintains several infrastructure systems essential for the entire Fleet to communicate end-to-end by providing a gateway for the tactical communities by incorporating the latest technologies into an integrated portfolio of products and services that facilitate effective C2 across the force. STACC supports 63 shore sites and over 410 surface and subsurface platforms in both CONUS and OCONUS locations (Maritime Operations Centers (MOC), Commander Task Force (CTF), Navy Computer Telecommunications Area Master Stations (NCTAMS), Naval Computer Telecommunications Stations (NCTS) and Detachments, and Broadcast Control Authorities (BCA)).

[MILCON P913:Shore Based Enterprise Network Enhancements] Shore Tactical Assured Command and Control (STACC) new suite of systems for the outfitting of the MILCON P-913 NCTAMS LANT new communication facility. The new NCTAMS LANT building will provide a secure, efficient, sustainable and adaptable communications facility to support all telecommunications requirements within the Atlantic Area of Operations.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 3 / PQ070 Shore Tactical Assured Command and Control (STACC)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC)												
B Kits												
Recurring												
1.1.1) Consolidated Prior Year Requirements - Organic	10 / 35.760	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 35.760
1.1.2) Equipment - STACC - NonOrganic [9]	60 / 237.935	17 / 20.352	22 / 27.107	26 / 31.909	- / -	26 / 31.909	15 / 18.740	13 / 16.615	10 / 12.281	11 / 13.509	Continuing	Continuing
1.1.3) MILCON P913:Shore Based Enterprise Network Enhancements - NonOrganic [10]	- / -	1 / 5.985	1 / 5.504	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 11.489
Subtotal: Recurring	*- / 273.695*	*- / 26.337*	*- / 32.611*	*- / 31.909*	*- / -*	*- / 31.909*	*- / 18.740*	*- / 16.615*	*- / 12.281*	*- / 13.509*	*Continuing*	*Continuing*
Subtotal: PQ070 Shore Tactical Assured Command and Control (STACC)	*70 / 273.695*	*18 / 26.337*	*23 / 32.611*	*26 / 31.909*	*- / -*	*26 / 31.909*	*15 / 18.740*	*13 / 16.615*	*10 / 12.281*	*11 / 13.509*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 273.695*	*- / 26.337*	*- / 32.611*	*- / 31.909*	*- / -*	*- / 31.909*	*- / 18.740*	*- / 16.615*	*- / 12.281*	*- / 13.509*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) STACC Production Support	- / 21.538	- / 0.701	- / 2.097	- / 2.118	- / -	- / 2.118	- / 1.306	- / 1.235	- / 0.803	- / 0.728	Continuing	Continuing
2.2) MILCON P913: Production	- / -	- / 0.315	- / 0.321	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.636
Subtotal: Support	*- / 21.538*	*- / 1.016*	*- / 2.418*	*- / 2.118*	*- / -*	*- / 2.118*	*- / 1.306*	*- / 1.235*	*- / 0.803*	*- / 0.728*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC)	- / 42.145	- / 2.103	- / 6.445	- / 7.665	- / 0.000	- / 7.665	- / 1.938	- / 1.722	- / 1.324	- / 1.457	Continuing	Continuing
Subtotal: Installation	*- / 42.145*	*- / 2.103*	*- / 6.445*	*- / 7.665*	*- / -*	*- / 7.665*	*- / 1.938*	*- / 1.722*	*- / 1.324*	*- / 1.457*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**337.378**	**29.456**	**41.474**	**41.692**	**0.000**	**41.692**	**21.984**	**19.572**	**14.408**	**15.694**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 3 / PQ070 Shore Tactical Assured Command and Control (STACC)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC)

Manufacturer Information

Manufacturer Name: Georgia Technical Research Institute (GTRI) — Manufacturer Location: Atlanta, GA

Administrative Leadtime *(in Months)*: 5 — Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019						
Delivery Dates	May 2019						

Manufacturer Name: Georgia Technical Research Institute (GTRI) (MILCON P-913) (11) — Manufacturer Location: Atlanta, GA

Administrative Leadtime *(in Months)*: 5 — Production Leadtime *(in Months)*: 5

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019						
Delivery Dates	Aug 2019						

Manufacturer Name: TBD (12) — Manufacturer Location: TBD

Administrative Leadtime *(in Months)*: 4 — Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Feb 2020	Feb 2021				
Delivery Dates		Apr 2020	Apr 2021				

Installation Information

Method of Implementation: Method:: Installation Name: PQ070 Shore Tactical Assured Command and Control (STACC)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	60 / 42.145	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	60 / 42.145
FY 2019	- / -	17 / 2.103	1 / 4.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	18 / 6.403
FY 2020	- / -	- / -	17 / 2.145	6 / 5.005	0 / 0.000	6 / 5.005	- / -	- / -	- / -	- / -	0 / 0.000	23 / 7.150
FY 2021	- / -	- / -	- / -	21 / 2.660	0 / 0.000	21 / 2.660	5 / 0.646	- / -	- / -	- / -	0 / 0.000	26 / 3.306
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.292	5 / 0.662	- / -	- / -	0 / 0.000	15 / 1.954
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 1.060	5 / 0.662	- / -	0 / 0.000	13 / 1.722
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.662	5 / 0.662	0 / 0.000	10 / 1.324
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.795	0 / 0.000	6 / 0.795
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 3 / PQ070 Shore Tactical Assured Command and Control (STACC)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC)

Installation Information

Method of Implementation: Method:: Installation Name: PQ070 Shore Tactical Assured Command and Control (STACC)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Total	60 / 42.145	17 / 2.103	18 / 6.445	27 / 7.665	0 / 0.000	27 / 7.665	15 / 1.938	13 / 1.722	10 / 1.324	11 / 1.457	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	60	-	-	6	11	-	3	10	5	5	8	9	5	5	3	3	4	5	2	3	3	5	-	2	3	5	-	3	3	Cont.	Cont.
Out	60	-	-	-	6	11	-	3	9	6	5	7	10	5	5	3	3	4	5	2	3	3	5	-	2	3	5	3	3	Cont.	Cont.

Method of Implementation (Organic): Consolidated Prior Year Requirements - Not Installed **Installation Quantity:** 10

Footnotes:

(9) Each quantity represents a single STACC Equipment modernization/capability upgrade to a specific site. The cost of each individual modernization effort varies depending on the complexity of modernization required to mitigate cyber security threats, keep pace with increased computing requirements for hosted applications, and support Department of Defense (DoD) directives to remove End of Life (EOL) Windows Operating Systems software as quickly as feasible. Procurements could include refresh of routers, switches, servers, workstations, multi-level thin clients, firewalls across the five security enclaves or be as complex as a complete network refresh.// The FY 2020 President's Budget request quantities represented the five (5) major shore regions STACC devices are fielded (not the number of STACC Equipment modernization procurements). To better detail requirements, the program has updated quantities to reflect the number of individual STACC Equipment modernization/capability upgrades being procured. // There will be over 1,000 different STACC devices fielded at 63 sites across the five major shore regions. Installations can include routers, switches, servers, workstations, multi-level thin clients, firewalls across the five security enclaves.//

(10) The various STACC systems, which make up the network, will be procured and installed in two phases to align with the P-913 MILCON transition schedule.

(11) Manufacturer for MILCON P-913 STACC equipment. Integration efforts required prior to installation. FY20 award with be on new competively awarded contract.

(12) New competitive STACC engineering services and procurement contract scheduled a February 2020 award.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 4 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	9.886	10.064	0.000	10.064	10.366	10.598	10.755	10.834	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	9.886	10.064	0.000	10.064	10.366	10.598	10.755	10.834	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**9.886**	**10.064**	**0.000**	**10.064**	**10.366**	**10.598**	**10.755**	**10.834**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Piers/ Enterprise Pier Connectivity Architecture (EPCA) quantities represent the number of operational US NAVY pierside locations that will be "touched" in some capacity each fiscal year. Unit cost fluctuations are a direct result of the various sizes of each location. Location size determines the cost and amount of equipment that needs to be procured and installed. Beginning in FY20, Piers/EPCA transitions from LI 8164 Navy/Marine Corps Intranet (NMCI) Outside Continental United States (OCONUS) (OCONUS Piers Technical Refresh) to LI 3050 Ship Communications Automation.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 4 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)												
A Kits												
Recurring												
1.1.1) Global Piers - Ashore - NonOrganic [13]	- / -	- / -	3 / 6.686	3 / 6.858	- / -	3 / 6.858	3 / 7.118	4 / 7.135	5 / 6.792	5 / 7.098	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 6.686*	*- / 6.858*	*- / -*	*- / 6.858*	*- / 7.118*	*- / 7.135*	*- / 6.792*	*- / 7.098*	*Continuing*	*Continuing*
Subtotal: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)	*- / -*	*- / -*	*3 / 6.686*	*3 / 6.858*	*- / -*	*3 / 6.858*	*3 / 7.118*	*4 / 7.135*	*5 / 6.792*	*5 / 7.098*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 6.686*	*- / 6.858*	*- / -*	*- / 6.858*	*- / 7.118*	*- / 7.135*	*- / 6.792*	*- / 7.098*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Piers - Production Support	- / -	- / -	- / 0.500	- / 0.456	- / -	- / 0.456	- / 0.564	- / 0.595	- / 0.543	- / 0.410	Continuing	Continuing
Subtotal: Support	*- / 0.000*	*- / -*	*- / 0.500*	*- / 0.456*	*- / -*	*- / 0.456*	*- / 0.564*	*- / 0.595*	*- / 0.543*	*- / 0.410*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)	- / 0.000	- / 0.000	- / 2.700	- / 2.750	- / 0.000	- / 2.750	- / 2.684	- / 2.868	- / 3.420	- / 3.326	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 2.700*	*- / 2.750*	*- / -*	*- / 2.750*	*- / 2.684*	*- / 2.868*	*- / 3.420*	*- / 3.326*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**9.886**	**10.064**	**0.000**	**10.064**	**10.366**	**10.598**	**10.755**	**10.834**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3050 / Ship Communications Automation	**Modification Number / Title:** 4 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)

Manufacturer Information

Manufacturer Name: Naval Informaiton Warfare Center (NIWC) | Manufacturer Location: San Diego, CA

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 4

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Dec 2019	Dec 2020				
Delivery Dates		Apr 2020	Apr 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: Global Piers - Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	3 / 2.700	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 2.700
FY 2021	- / -	- / -	- / -	3 / 2.750	0 / 0.000	3 / 2.750	- / -	- / -	- / -	- / -	0 / 0.000	3 / 2.750
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.684	- / -	- / -	- / -	0 / 0.000	3 / 2.684
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.868	- / -	- / -	0 / 0.000	4 / 2.868
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3.420	- / -	0 / 0.000	5 / 3.420
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3.326	0 / 0.000	5 / 3.326
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	3 / 2.700	3 / 2.750	0 / 0.000	3 / 2.750	3 / 2.684	4 / 2.868	5 / 3.420	5 / 3.326	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	3	-	-	-	3	-	-	-	3	-	-	-	4	-	-	-	5	-	-	-	5	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	1	2	-	-	1	2	-	-	1	2	-	-	2	2	-	-	2	3	-	-	Cont.	Cont.

Footnotes:

(13) In FY21, Piers / Enterprise Pier Connectivity Architecture (EPCA) will procure (3) and install (3) EPCA units pier side to address pier Information Technology (IT) infrastructure modernization in support of Force Protection matter of urgency. Funds will support pre-installation design, site surveys, procurement of hardware and software, production support, and installation of Piers IT infrastructure.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604280N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	161.472	37.308	29.486	45.120	0.000	45.120	61.589	57.416	49.324	35.698	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	161.472	37.308	29.486	45.120	0.000	45.120	61.589	57.416	49.324	35.698	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**161.472**	**37.308**	**29.486**	**45.120**	**0.000**	**45.120**	**61.589**	**57.416**	**49.324**	**35.698**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	0.010	0.093	-	0.093	0.150	0.062	0.041	-	-	0.356
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P5 / NU019 EPLRS-DR/EMUT]: Enhanced Position Location Reporting System - Data Radio (EPLRS-DR)/Enhanced Man-Pack UHF Tactical (EMUT) is a Blue in Support of Green (BISOG) program that provides secure Anti-Jam (AJ), Ultra High Frequency (UHF) (420-450 MHz) and Line of Sight (LOS) data communications in support of amphibious operations at throughputs of up to 54 Kbps. EPLRS-DR provides embedded Position Location Information (PLI) between shipboard networks and the shore-based Marine Tactical Data Network (TDN) and the Army Tactical Internet (TI). To meet a National Security Agency (NSA) mandate, KOK13 cryptographic equipment was replaced with KOK23/Combat Key Generator (CKG) cryptographic equipment. EPLRS/EMUT efforts will include antenna upgrades. EPLRS-DR will also include Landing Force Iridium infrastructure.

[P5 / NU790 Navy Expeditionary C4I]: Navy Expeditionary Command, Control, Communications, Computers, & Intelligence (C4I): Executes procurements for outfitting Table of Allowance (TOA) buy lists within the Naval Special Warfare (NSW) forces, ensuring common communications and Automated Data Processing (ADP) solutions are being coordinated, tracked, and procured. Funding reflects establishment, approval and procurement of NSW service-common TOA to begin correcting shortfalls and bringing NSW forces into alignment with required outfitting standards in accordance with SOCOM-USN Memorandum of Agreement.

[P5 / NU239 PORT NSW]: NU239 - PORT NSW: The FY20 budget request has been combined with NU790 to streamline acquisition efforts.

Portable Radio/Naval Special Warfare (PORT NSW) tactical radio: PORT NSW procures hand held and man pack/vehicular radios for NSW. Procurement needed to support Force Protection operations, especially with joint forces. NSW operational elements (SEAL platoons and Combatant Craft Detachments) rely on tactical communications and electronics equipment to accomplish all missions assigned in support of the Joint and Fleet commanders. Navy resourced tactical communications equipment is considered mission essential and will be employed by individual SEAL personnel and NSW combat elements in man pack configurations as well as onboard tactical vehicles and NSW combatant craft in tactical operations centers in fixed mount configurations.

[P5 / ESB SOF (BSO 24)]: Expeditionary Mobile Base Special Operations Forces (ESB SOF) - The SOF component requires an ESB (a type of boat) to have the capability for planning and conducting Intelligence, Surveillance, and Reconnaissance (ISR) for Boat Assault Force (BAF) and Helicopter Assault Force (HAF) missions. These funds procure and install equipment to support SOF communications, consisting of a radio backbone infrastructure and increasing the bandwidth to support SOF missions. These additional capabilities will be back fitted during ESB 4's Post Shakedown Availability.

[P3A / Battle Force Tactical Network]: Battle Force Tactical Network (BFTN): This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans. BFTN enables delivery of Internet Protocol (IP) based collaboration services over legacy High Frequency (HF) assets.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604280N
Line Item MDAP/MAIS Code: N/A		

The system provides an interoperable, low data rate, multi-node, Beyond-Line-of-Sight (BLOS) tactical edge networking capability using existing HF radio infrastructure. BFTN provides data path backbone for both airborne and afloat forces and increased data exchange with Allied Coalition forces. BFTN provides National, Allied, and Coalition maritime units with a medium band IP-based, tactical ship to ship at-sea networking capability, using legacy half-duplex Ultra High Frequency (UHF) Line-of-Sight and provides the only Allied Coalition HF/UHF Communications in a satellite denied/degraded situation. BFTN will provide a bridge between legacy radio systems and future emerging wideband networking technologies.

BFTN Resilient Command and Control (RC2) System Enhancement (BRSE): The HF Modernization study (conducted in 2018 by OPNAV N81 and NAVIFOR N82) identified RC2 capability gaps needed to support the RC2 posture. BFTN RC2 System Enhancements (BRSE) will provide the RF network for an "always on/always connected" capability and for increased range and data rate capabilities through an agile RF data networking capability. FY21 BRSE integrates 2-channels of modern radios and modems into a full production system and funds the procurement of fourteen (14) modern software defined radio systems.

[P3A - 2 / Portable Radio Project]: Portable Radio Project is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans. PRP is the Navy's single point of contact for procurement, life cycle support and future readiness planning of software-defined, portable, tactical hand held and man pack radios. PRP provides fixed mount radios for Navy Expeditionary and Naval Special Warfare combat forces and Emergency Portable Radios (EPR) for surface ships and other platforms. Patrol Craft installations replace currently fielded AN/PRC-150 radios with crypto modernized AN/PRC-160 radios to meet NSA crypto modernization mandate.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604280N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Communications Items under $5M	P-5a			- / 140.194	- / 27.585	- / 17.290	- / 16.642	- / 0.000	- / 16.642
P-3a	1 / Battle Force Tactical Network (TBD)				- / 18.175	- / 9.723	- / 12.196	- / 25.267	- / 0.000	- / 25.267
P-3a	2 / Portable Radio Project (TBD)				- / 3.103	- / 0.000	- / 0.000	- / 3.211	- / 0.000	- / 3.211
P-40	**Total Gross/Weapon System Cost**				**- / 161.472**	**- / 37.308**	**- / 29.486**	**- / 45.120**	**- / 0.000**	**- / 45.120**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Communications Items under $5M	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Battle Force Tactical Network (TBD)				- / 40.459	- / 35.574	- / 27.243	- / 19.142	Continuing	Continuing
P-3a	2 / Portable Radio Project (TBD)				- / 3.320	- / 3.733	- / 3.744	- / 3.813	- / 0.000	- / 20.924
P-40	**Total Gross/Weapon System Cost**				**- / 61.589**	**- / 57.416**	**- / 49.324**	**- / 35.698**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

NU239 - PORT NSW: The FY21 budget request has been combined with NU790 to streamline acquisition efforts.

NU295 - Battle Force Tactical Network (BFTN): FY21 OPN funds the procurement of thirty-seven (37) BFTN systems required to meet emerging communications threat environment. In addition, FY21 funds engineering changes to strengthen cyber security posture by implementing WIN 10 upgrades on previously fielded systems.

NU295 - BFTN Bravo Resilient Command and Control (RC2) System Enhancement (BRSE): FY21 OPN funds the procurement of fourteen (14) software defined radios. These radios will be integrated into systems armed with critical capabilities designed to meet emerging communications threat environments. The design enhancements in these radios include enhanced HF Automatic Link Establishment (ALE) and advanced HF waveforms, which bring increased performance in a contested and congested environment and allow the radios to adjust to spectrum interference, adaptive null steering, and Multiple Input Multiple Output (MIMO).

NU237 - Portable Radio Project: FY21 OPN funds the procurement of Emergency Portable Radios (EPR) crypto modernization for nine (9) ships, which includes ninety (90) hand held radios and thirty-six (36) man packs. In addition, FY21 funds the procurement of twenty (20) AN/PRC-160 radios for patrol craft crypto modernization.

NU019 - EPLRS-DR/EMUT: FY21 funding procures eight (8) Enhanced Position Location Reporting System (EPLRS) systems. A complete unit consists of one AN/VRC-114(V)2 radio mount, one RF-5051PS power supply, and associated ancillary equipment. The quantity procured in any given year is determined by the Fleet's demand signal and platform availability.

NU790 - FY21 funding provides mission critical communications equipment, to include portable hand held radios, man pack radios, secure satellite telephones, unmanned air vehicle (UAV) communication devices, ruggedized laptops, and encryption-decryption devices to US Navy Sea, Air, and Land (SEAL) combat operations in forward deployed contingency locations. This equipment provides real-time, actionable, time-sensitive transmission and reception of mission orders, intelligence, action and engagement status reporting, imaging, and target specification simultaneously in multiple theaters throughout the world. The disaggregated nature of current operations has smaller SEAL Teams deployed across the Geographic Combatant Commanders (GCC) conducting combat or combat advise operations in austere

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604280N
Line Item MDAP/MAIS Code: N/A		

environments with little-to-no established DoD infrastructure. This equipment supports NSW core mission requirements and is essential to the readiness and battlefield effectiveness of NSW in winning the current fight against extremist elements.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Item Number / Title [DODIC]:** 1 / Communications Items under $5M
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	140.194	27.585	17.290	16.642	0.000	16.642
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	140.194	27.585	17.290	16.642	0.000	16.642
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**140.194**	**27.585**	**17.290**	**16.642**	**0.000**	**16.642**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - NU019 EPLRS-DR/EMUT Cost																		
Non Recurring Cost																		
1.1.1) EPLRS-DR Procurement(†) (1)	70.333	57	4.009	142.625	8	1.141	145.500	8	1.164	148.250	8	1.186	-	-	0.000	148.250	8	1.186
Subtotal: Non Recurring Cost	-	-	*4.009*	-	-	*1.141*	-	-	*1.164*	-	-	*1.186*	-	-	*0.000*	-	-	*1.186*
Subtotal: Hardware - NU019 EPLRS-DR/EMUT Cost	**-**	**-**	***4.009***	**-**	**-**	***1.141***	**-**	**-**	***1.164***	**-**	**-**	***1.186***	**-**	**-**	***0.000***	**-**	**-**	***1.186***
Hardware - NU790 Navy Expeditionary C4I Cost																		
Recurring Cost																		
2.1.1) Navy Expeditionary C4I Procurement (2)	831.333	12	9.976	-	-	9.510	-	-	12.687	-	-	13.334	-	-	0.000	-	-	13.334
Subtotal: Recurring Cost	-	-	*9.976*	-	-	*9.510*	-	-	*12.687*	-	-	*13.334*	-	-	*0.000*	-	-	*13.334*
Subtotal: Hardware - NU790 Navy Expeditionary C4I Cost	**-**	**-**	***9.976***	**-**	**-**	***9.510***	**-**	**-**	***12.687***	**-**	**-**	***13.334***	**-**	**-**	***0.000***	**-**	**-**	***13.334***
Hardware - NU239 PORT NSW Cost																		
Recurring Cost																		
3.1.1) PORT NSW Hand Held Procurement(†) (3)	15.450	1,556	24.040	15.714	266	4.180	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
3.1.2) PORT NSW Man Pack Procurement(†)	35.586	1,193	42.454	38.849	106	4.118	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3057 / Communications Items under $5M	Item Number / Title [DODIC]: 1 / Communications Items under $5M
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Recurring Cost	-	-	*66.494*	-	-	*8.298*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - NU239 PORT NSW Cost	**-**	**-**	***66.494***	**-**	**-**	***8.298***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - NU385 ESB SOF (BSO 24) Cost																		
Recurring Cost																		
4.1.1) ESB SOF (BSO 24) (4)	-	-	4.545	-	-	2.790	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.2) ESB SOF Install (5)	-	-	4.701	-	-	3.648	-	-	1.305	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*9.246*	-	-	*6.438*	-	-	*1.305*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - NU385 ESB SOF (BSO 24) Cost	**-**	**-**	***9.246***	**-**	**-**	***6.438***	**-**	**-**	***1.305***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - NU777 Installations FMP Cost																		
5.1) EPLRS-DR FMP	-	-	2.242	-	-	1.526	-	-	1.600	-	-	1.595	-	-	0.000	-	-	1.595
Subtotal: Support - NU777 Installations FMP Cost	**-**	**-**	***2.242***	**-**	**-**	***1.526***	**-**	**-**	***1.600***	**-**	**-**	***1.595***	**-**	**-**	***0.000***	**-**	**-**	***1.595***
Support - NU777 DSA Cost																		
6.1) EPLRS-DR DSA	-	-	0.790	-	-	0.475	-	-	0.374	-	-	0.363	-	-	0.000	-	-	0.363
Subtotal: Support - NU777 DSA Cost	**-**	**-**	***0.790***	**-**	**-**	***0.475***	**-**	**-**	***0.374***	**-**	**-**	***0.363***	**-**	**-**	***0.000***	**-**	**-**	***0.363***
Support - NU555 Production Support Cost																		
7.1) EPLRS-DR Production Support	-	-	0.349	-	-	0.052	-	-	0.050	-	-	0.051	-	-	0.000	-	-	0.051
7.2) PORT NSW Production Support (6)	-	-	3.563	-	-	0.145	-	-	0.110	-	-	0.113	-	-	0.000	-	-	0.113
7.3) Consolidated Prior Year Requirements (7)	-	-	43.525	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - NU555 Production Support Cost	**-**	**-**	***47.437***	**-**	**-**	***0.197***	**-**	**-**	***0.160***	**-**	**-**	***0.164***	**-**	**-**	***0.000***	**-**	**-**	***0.164***
Gross/Weapon System Cost	**-**	**-**	**140.194**	**-**	**-**	**27.585**	**-**	**-**	**17.290**	**-**	**-**	**16.642**	**-**	**-**	**0.000**	**-**	**-**	**16.642**

(†) indicates the presence of a P-5a

Footnotes:

(1) Funding in FY21 includes procurement for Enhanced Position Location Reporting System - Data Radio (EPLRS-DR), Enhanced Man-Pack Ultra High Frequency (UHF) Tactical (EMUT) Mobile User Objective System (MUOS) antennas, and Landing Force Iridium to meet Marine Embarked Units (MEU) to support High Frequency (HF)/UHF communications between the Landing Force Operations Center (LFOC) and

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3057 / Communications Items under $5M	Item Number / Title [DODIC]: 1 / Communications Items under $5M
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Marines ashore to ensure interoperability between the Navy and Marine Corps. The quantity procured and installed (in any given year) is determined by the Fleet's demand signal and platform availability and leverages the In-Service Engineering Agent (ISEA) to combine installs.

(2) Quantities are not provided based on thousands of various communication and Automated Data Processing (ADP) equipment being procured in support of correcting Naval Special Warfare (NSW) Table of Allowances (TOA) equipment shortfalls. NSW TOA identifies NSW Sea Air and Land (SEAL) required list of equipment (tactical manpack/vehicular radios, handheld radios, rovers, etc) to meet mission needs. FY21 increase corrects in-theater equipment procurement shortfalls and brings NSW forces into alignment with required outfitting standards in accordance with SOCOM-USN Memorandum of Agreement (MOA). Specific procurements include Embedded National Tactical Receiver (ENTR) for SEAL Teams and NSW Special Boat Teams, impacting over 2,000 personnel, to meet coastal and riverine warfare requirements, as well as cryptographic tactical radios to comply with the newest modernization standards.

(3) NU239 - PORT NSW: Starting in FY20, the budget request has been combined with NU790 to streamline acquisition efforts.

(4) Quantities are not provided since various equipment is being procured to provide Special Operations Forces (SOF) capability on Expeditionary Mobile Base (ESB) 4. Cost increase is to procure remaining SOF components to include several VHF and UHF antennas to be installed during the boats Post Shakedown Availability.

(5) The installations costs are being broken out for transparency. The last time an installation occurred was in FY19. In FY 20 the installation cost (for ESB 4) were included in the recurring cost.

(6) NU555 - PORT NSW Production Support: Starting in FY20, budget request has been combined with NU790 to streamline acquisition efforts.

(7) Consolidated prior years for PORT RAD - Hand Held Procurement, Hydra Procurement, NAVSEA HYDRA Requirement, DAMA IW Procurement, Hydra Installations FMP, HF SAR Installations FMP, and Navy Expeditionary C4I Production Support

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3057 / Communications Items under $5M	Item Number / Title [DODIC]: 1 / Communications Items under $5M

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) EPLRS-DR Procurement		2019	Harris Corporation / Rochester, NY	C / FFP	NAVWAR	Dec 2018	May 2019	8	142.625	Y		Jun 2018
1.1.1) EPLRS-DR Procurement		2020	Harris Corporation / Rochester, NY	C / FFP	NAVWAR	Dec 2019	May 2020	8	145.500	Y		Jun 2019
1.1.1) EPLRS-DR Procurement		2021	Harris Corporation / Rochester, NY	C / FFP	NAVWAR	Dec 2020	May 2021	8	148.250	Y		Jun 2020
3.1.1) PORT NSW Hand Held Procurement		2019	Harris Corporation / NY	C / FFP	NAVWAR	Dec 2018	May 2019	266	15.714	Y		
3.1.2) PORT NSW Man Pack Procurement		2019	Harris Corporation / NY	C / FFP	NAVWAR	Dec 2018	May 2019	106	38.849	Y		

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 1 / Battle Force Tactical Network
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	18.175	9.723	12.196	25.267	0.000	25.267	40.459	35.574	27.243	19.142	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	18.175	9.723	12.196	25.267	0.000	25.267	40.459	35.574	27.243	19.142	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**18.175**	**9.723**	**12.196**	**25.267**	**0.000**	**25.267**	**40.459**	**35.574**	**27.243**	**19.142**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Battle Force Tactical Network (BFTN): This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans. Battle Force Tactical Network (BFTN) is the Navy's near-term solution to Resilient Command and Control (RC2) communications in a satellite denied/degraded environment.

Funding in FY2021 is for the procurement of thirty-seven (37) Battle Force Tactical Network (BFTN) systems required to meet the emerging communications threat environment. In addition, funding in FY2021 is for engineering changes required to strengthen cyber security posture by implementing WIN 10 upgrades on previously fielded BFTN systems.

BFTN Resilient Command and Control (RC2) System Enhancement (BRSE): The HF Modernization study (conducted in 2018 by OPNAV N81 and NAVIFOR N82) identified RC2 capability gaps needed to support the RC2 posture. BFTN RC2 System Enhancements (BRSE) will provide the RF network for an "always on/always connected" capability and for increased range and data rate capabilities through an agile RF data networking capability. Funding in FY2021 integrates 2-channels of modern radios and modems into a full production system and funds the procurement of fourteen (14) modern software defined radio systems.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 1 / Battle Force Tactical Network
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Battle Force Tactical Network												
B Kits												
Recurring												
1.1.1) BFTN Alpha System Procurement - NonOrganic	24 / 5.047	18 / 4.455	8 / 2.020	37 / 9.529	- / -	37 / 9.529	20 / 5.261	6 / 1.606	21 / 5.739	5 / 1.394	Continuing	Continuing
1.1.2) BFTN Bravo System Procurement (BRSE) - NonOrganic [8]	- / -	- / -	- / -	14 / 4.200	- / -	14 / 4.200	37 / 11.211	34 / 10.405	15 / 4.636	10 / 3.122	Continuing	Continuing
1.1.3) BFTN Engineering Change Order - Organic	- / 1.078	- / 3.618	- / 3.909	- / 3.828	- / -	- / 3.828	- / -	- / -	- / -	- / -	- / -	- / 12.433
Subtotal: Recurring	*- / 6.125*	*- / 8.073*	*- / 5.929*	*- / 17.557*	*- / -	- / 17.557*	*- / 16.472*	*- / 12.011*	*- / 10.375*	*- / 4.516*	*Continuing*	*Continuing*
Subtotal: Battle Force Tactical Network	*24 / 6.125*	*18 / 8.073*	*8 / 5.929*	*51 / 17.557*	*- / -*	*51 / 17.557*	*57 / 16.472*	*40 / 12.011*	*36 / 10.375*	*15 / 4.516*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 6.125*	*- / 8.073*	*- / 5.929*	*- / 17.557*	*- / -*	*- / 17.557*	*- / 16.472*	*- / 12.011*	*- / 10.375*	*- / 4.516*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) BFTN Alpha / BFTN Bravo Production Support [9]	- / 1.177	- / 0.267	- / 0.121	- / 0.695	- / 0.000	- / 0.695	- / 0.961	- / 0.706	- / 0.548	- / 0.221	Continuing	Continuing
2.2) BFTN Alpha DSA [10]	- / 2.560	- / 1.383	- / 0.000	- / 3.352	- / 0.000	- / 3.352	- / 2.764	- / 1.044	- / 1.875	- / 0.892	Continuing	Continuing
2.3) BFTN Bravo DSA [11]	- / 0.000	- / 0.000	- / 0.000	- / 0.877	- / 0.000	- / 0.877	- / 2.959	- / 3.467	- / 1.926	- / 1.006	Continuing	Continuing
Subtotal: Support	*- / 3.737*	*- / 1.650*	*- / 0.121*	*- / 4.924*	*- / -*	*- / 4.924*	*- / 6.684*	*- / 5.217*	*- / 4.349*	*- / 2.119*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Battle Force Tactical Network	- / 8.313	- / 0.000	- / 6.146	- / 2.786	- / 0.000	- / 2.786	- / 17.303	- / 18.346	- / 12.519	- / 12.507	Continuing	Continuing
Subtotal: Installation	*- / 8.313*	*- / -*	*- / 6.146*	*- / 2.786*	*- / -*	*- / 2.786*	*- / 17.303*	*- / 18.346*	*- / 12.519*	*- / 12.507*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**18.175**	**9.723**	**12.196**	**25.267**	**0.000**	**25.267**	**40.459**	**35.574**	**27.243**	**19.142**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 1 / Battle Force Tactical Network
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Battle Force Tactical Network

Manufacturer Information

Manufacturer Name: L3 TECHNOLOGIES INC	Manufacturer Location: CAMDEN, NJ
Administrative Leadtime *(in Months)*: 4	Production Leadtime *(in Months)*: 9

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jun 2019	Apr 2020	Feb 2021				
Delivery Dates	Mar 2020	Jan 2021	Nov 2021				

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime *(in Months)*: 4	Production Leadtime *(in Months)*: 9

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Feb 2021				
Delivery Dates			Nov 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: BFTN Alpha System Procurement

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	24 / 8.313	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 8.313
FY 2019	- / -	- / -	18 / 6.146	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	18 / 6.146
FY 2020	- / -	- / -	- / -	8 / 2.786	0 / 0.000	8 / 2.786	- / -	- / -	- / -	- / -	0 / 0.000	8 / 2.786
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	37 / 13.145	- / -	- / -	- / -	0 / 0.000	37 / 13.145
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	20 / 7.247	- / -	- / -	0 / 0.000	20 / 7.247
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.218	- / -	0 / 0.000	6 / 2.218
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	21 / 7.917	0 / 0.000	21 / 7.917
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	24 / 8.313	- / -	18 / 6.146	8 / 2.786	0 / 0.000	8 / 2.786	37 / 13.145	20 / 7.247	6 / 2.218	21 / 7.917	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	24	-	-	-	-	-	5	7	6	-	2	3	3	5	11	12	9	2	6	7	5	-	2	2	2	3	5	7	6	Cont.	Cont.
Out	24	-	-	-	-	-	-	5	7	6	-	2	3	3	5	11	12	9	2	6	7	5	-	2	2	2	3	5	7	Cont.	Cont.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 1 / Battle Force Tactical Network
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Battle Force Tactical Network

Installation Information

Method of Implementation: [none specified]:: Installation Name: BFTN Bravo System Procurement (BRSE)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	14 / 4.158	- / -	- / -	- / -	0 / 0.000	14 / 4.158
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	37 / 11.099	- / -	- / -	0 / 0.000	37 / 11.099
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	34 / 10.301	- / -	0 / 0.000	34 / 10.301
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 4.590	0 / 0.000	15 / 4.590
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	14 / 4.158	37 / 11.099	34 / 10.301	15 / 4.590	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	7	3	4	-	6	10	12	9	6	11	9	8	5	4	3	3	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	3	4	-	6	10	12	9	6	11	9	8	5	4	3	Cont.	Cont.

Footnotes:

(8) BFTN Bravo Resilient Command and Control (RC2) System Enhancement (BRSE): FY21 OPN funds the procurement of fourteen (14) software defined radios. These radios will be integrated into systems armed with critical capabilities designed to meet emerging communications threat environments. The design enhancements in these radios include enhanced HF Automatic Link Establishment (ALE) and advanced HF waveforms, which bring increased performance in a contested and congested environment and allow the radios to adjust to spectrum interference, adaptive null steering, and Multiple Input Multiple Output (MIMO).

(9) This line includes production support for all BFTN variants, to include BRSE.

(10) This line includes Design Services Allocation (DSA) for BFTN Alpha variant. Pre-Installation DSA are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year. In FY21, BFTN funds $0.424M SOVTs and design closeout for eight (8) FY21 installations, and $2.928M for the pre-installation planning for thirty-seven (37) FY22 installations.

(11) This line includes Design Services Allocation (DSA) for BFTN Bravo Resilient Command and Control (RC2) System Enhancement (BRSE) variant. Pre-Installation DSA are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year. In FY21, BRSE funds $0.877M for the pre-installation planning for fourteen (14) FY22 installations.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 2 / Portable Radio Project
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3.103	0.000	0.000	3.211	0.000	3.211	3.320	3.733	3.744	3.813	0.000	20.924
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3.103	0.000	0.000	3.211	0.000	3.211	3.320	3.733	3.744	3.813	0.000	20.924
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3.103**	**0.000**	**0.000**	**3.211**	**0.000**	**3.211**	**3.320**	**3.733**	**3.744**	**3.813**	**0.000**	**20.924**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Portable Radio Project is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans. PRP provides fixed mount radios for Navy Expeditionary and Naval Special Warfare combat forces, and Emergency Portable Radios (EPR) for surface ships and other platforms. Patrol Craft installations replace currently fielded AN/PRC-150 radios with crypto modernized AN/PRC-160 radios to meet NSA crypto modernization mandate. Funding in FY2021 is for the procurement of ninety (90) hand held radios and thirty-six (36) man packs for nine (9) ships, and twenty (20) AN/PRC-160 radios for installation on ten (10) patrol crafts.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 2 / Portable Radio Project
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Portable Radio Project												
B Kits												
Recurring												
1.1.1) PRP System Procurement (EPR Crypto Mod Hand Held) - Organic	259 / 2.528	- / -	- / -	90 / 0.692	- / -	90 / 0.692	90 / 0.702	140 / 1.105	150 / 1.200	150 / 1.215	- / -	879 / 7.442
1.1.2) PRP System Procurement (EPR Crypto Mod Man Pack) - Organic	10 / 0.352	- / -	- / -	36 / 1.296	- / -	36 / 1.296	36 / 1.332	56 / 2.128	60 / 2.340	60 / 2.400	- / -	258 / 9.848
1.1.3) PRP System Procurement (Patrol Craft Crypto Mod) - NonOrganic	- / -	- / -	- / -	20 / 0.740	- / -	20 / 0.740	8 / 0.292	- / -	- / -	- / -	- / -	28 / 1.032
Subtotal: Recurring	*- / 2.880*	*- / -*	*- / -*	*- / 2.728*	*- / -*	*- / 2.728*	*- / 2.326*	*- / 3.233*	*- / 3.540*	*- / 3.615*	*- / 0.000*	*- / 18.322*
Subtotal: Portable Radio Project	*269 / 2.880*	*- / -*	*- / -*	*146 / 2.728*	*- / -*	*146 / 2.728*	*134 / 2.326*	*196 / 3.233*	*210 / 3.540*	*210 / 3.615*	*- / -*	*1,165 / 18.322*
Subtotal: Procurement, All Modification Items	*- / 2.880*	*- / -*	*- / -*	*- / 2.728*	*- / -*	*- / 2.728*	*- / 2.326*	*- / 3.233*	*- / 3.540*	*- / 3.615*	*- / 0.000*	*- / 18.322*
Support *(All Modification Items)*												
2.1) PRP Production Support	- / 0.223	- / -	- / -	- / 0.157	- / -	- / 0.157	- / 0.108	- / 0.166	- / 0.204	- / 0.198	- / -	- / 1.056
2.2) PRP DSA (12)	- / -	- / -	- / -	- / 0.326	- / -	- / 0.326	- / 0.136	- / 0.034	- / -	- / -	- / -	- / 0.496
Subtotal: Support	*- / 0.223*	*- / -*	*- / -*	*- / 0.483*	*- / -*	*- / 0.483*	*- / 0.244*	*- / 0.200*	*- / 0.204*	*- / 0.198*	*- / 0.000*	*- / 1.552*
Installation												
Modification Item 1 of 1: Portable Radio Project	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.750	- / 0.300	- / 0.000	- / 0.000	- / 0.000	- / 1.050
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.750*	*- / 0.300*	*- / -*	*- / -*	*- / 0.000*	*- / 1.050*
Total												
Total Cost (Procurement + Support + Installation)	**3.103**	**0.000**	**0.000**	**3.211**	**0.000**	**3.211**	**3.320**	**3.733**	**3.744**	**3.813**	**0.000**	**20.924**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 2 / Portable Radio Project
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Portable Radio Project

Manufacturer Information

Manufacturer Name: Harris Corp	Manufacturer Location: Rochester, NY
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 5

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates			Oct 2020				
Delivery Dates			Mar 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: PRP System Procurement (Patrol Craft Crypto Mod)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	20 / 0.750	- / -	- / -	- / -	0 / 0.000	20 / 0.750
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.300	- / -	- / -	0 / 0.000	8 / 0.300
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	20 / 0.750	8 / 0.300	- / -	- / -	0 / 0.000	28 / 1.050

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	28
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	12	-	-	8	-	-	-	-	-	-	-	-	-	-	-	28

Method of Implementation (Organic): PRP System Procurement (EPR Crypto Mod Hand Held) - Not Installed	**Installation Quantity:** 879
Method of Implementation (Organic): PRP System Procurement (EPR Crypto Mod Man Pack) - Not Installed	**Installation Quantity:** 258

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	**P-1 Line Item Number / Title:** 3057 / Communications Items under $5M	**Modification Number / Title:** 2 / Portable Radio Project
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Footnotes:

(12) Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications	**P-1 Line Item Number / Title:** 3107 / Submarine Broadcast Support

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	124.478	25.752	50.833	31.133	0.000	31.133	42.289	28.583	27.485	35.469	-	366.022
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	124.478	25.752	50.833	31.133	0.000	31.133	42.289	28.583	27.485	35.469	-	366.022
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**124.478**	**25.752**	**50.833**	**31.133**	**0.000**	**31.133**	**42.289**	**28.583**	**27.485**	**35.469**	**-**	**366.022**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.121	0.123	0.136	-	0.136	0.151	0.145	0.146	0.149	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications	**P-1 Line Item Number / Title:** 3107 / Submarine Broadcast Support

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Submarine Broadcast Support				- / 124.478	- / 25.752	- / 50.833	- / 31.133	- / -	- / 31.133
P-40	**Total Gross/Weapon System Cost**				**- / 124.478**	**- / 25.752**	**- / 50.833**	**- / 31.133**	**- / 0.000**	**- / 31.133**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12	**P-1 Line Item Number / Title:** 3107 / Submarine Broadcast Support	**Aggregated Items Title:** Submarine Broadcast Support

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) Submarine Broadcast Support																				
1.1) Submarine Broadcast Support	A		-	-	124.478	-	-	25.752	-	-	50.833	-	-	31.133	-	-	-	-	-	31.133
Subtotal: 1) Submarine Broadcast Support			**-**	**-**	***124.478***	**-**	**-**	***25.752***	**-**	**-**	***50.833***	**-**	**-**	***31.133***	**-**	**-**	**-**	**-**	**-**	***31.133***
Total			**-**	**-**	**124.478**	**-**	**-**	**25.752**	**-**	**-**	**50.833**	**-**	**-**	**31.133**	**-**	**-**	**-**	**-**	**-**	**31.133**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications	**P-1 Line Item Number / Title:** 3130 / Submarine Communication Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,019.439	71.190	60.794	62.214	0.000	62.214	73.899	73.227	74.121	75.594	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,019.439	71.190	60.794	62.214	0.000	62.214	73.899	73.227	74.121	75.594	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,019.439**	**71.190**	**60.794**	**62.214**	**0.000**	**62.214**	**73.899**	**73.227**	**74.121**	**75.594**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.377	0.765	1.115	-	1.115	0.739	0.509	0.332	0.339	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications	**P-1 Line Item Number / Title:** 3130 / Submarine Communication Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Submarine Communication Equipment				- / 1,019.439	- / 71.190	- / 60.794	- / 62.214	- / -	- / 62.214
P-40	**Total Gross/Weapon System Cost**				**- / 1,019.439**	**- / 71.190**	**- / 60.794**	**- / 62.214**	**- / 0.000**	**- / 62.214**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY21 funding request was reduced by $3.819 million to account for the availability of prior year execution balances.

The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12	**P-1 Line Item Number / Title:** 3130 / Submarine Communication Equipment	**Aggregated Items Title:** Submarine Communication Equipment (1)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) Submarine Communication Equipment																				
1.1) Submarine Communication Equipment (2)	A		-	-	1,019.439	-	-	71.190	-	-	60.794	-	-	62.214	-	-	-	-	-	62.214
Subtotal: 1) Submarine Communication Equipment			**-**	**-**	***1,019.439***	**-**	**-**	***71.190***	**-**	**-**	***60.794***	**-**	**-**	***62.214***	**-**	**-**	**-**	**-**	**-**	***62.214***
Total			**-**	**-**	**1,019.439**	**-**	**-**	**71.190**	**-**	**-**	**60.794**	**-**	**-**	**62.214**	**-**	**-**	**-**	**-**	**-**	**62.214**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

(1) The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

(2) BSO 15 controls included in FY19-FY20 total cost controls

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: 237

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,269.306	41.902	45.084	47.421	0.000	47.421	38.762	33.897	29.412	29.684	2.100	1,537.568
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,269.306	41.902	45.084	47.421	0.000	47.421	38.762	33.897	29.412	29.684	2.100	1,537.568
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,269.306**	**41.902**	**45.084**	**47.421**	**0.000**	**47.421**	**38.762**	**33.897**	**29.412**	**29.684**	**2.100**	**1,537.568**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.127	0.111	0.444	-	0.444	0.600	0.430	0.146	0.149	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Satellite Communications (SATCOM) Systems P-1 line provides funds for procurement of shipboard terminal equipment for ship-to-ship, ship-to-shore and ship-to-aircraft tactical communications via earth orbiting relay satellites. This includes Radio Frequency (RF) equipment and baseband equipment assembled and grouped into systems and subsystems structured to address specific naval communications requirements. These systems provide modem processors and peripheral equipment that control the RF links for message traffic, direct data transfer and secure voice communications. They are selected and oriented by communications traffic levels, types of communications and operational missions. Commercial Broadband Satellite Program (CBSP) technical refresh of system modems and Ka Kits will directly support Assured Command and Control (AC2) posture, SATCOM reliability, space resiliency via band diversity and redundancy. AC2 modems enable the use of Wideband Global Satellite (WGS) X-Band (ship/ submarine transmit and receive) and Ka-band (shore receive and transmit) resources to maintain link connectivity to provide assured access to mission critical communications in Anti-Access Anti-Denial (A2AD) jamming environments.

Demand Assigned Multiple Access (DAMA)/ Miniaturized DAMA: Ultra High Frequency (UHF) DAMA and MINI DAMA systems supports Command and Control (C2) voice and data communications over Satellite and Line of Sight (LOS) links. Cryptographic modernization is required for UHF systems to continue use and enable operations (e.g. Ballistic Missile Defense (BMD), Tomahawk Strike Network (TSN) and Intelligence Broadcast Services (IBS). Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6510.02E directs the military Services to modernize National Security Agency (NSA) certified cryptographic products and algorithms prior to published Last Year of Use dates to ensure secure, interoperable information sharing. NSA's published de-certification and cease key dates for crypto algorithm contained in UHF legacy communications systems. Funding provides for the engineering, testing, procurement and product integration.

Joint UHF MILSATCOM Networks Integrated Control System (JMINI CS): Funding supports procurement and installation of mission related JMINI CS equipment in support of MILCON C4I Shore Based Enterprise Network Enhancements. JMINI CS provides SATCOM capability over increasingly limited satellite channels and provides remote system monitoring and end user troubleshooting capability to facilitate warfighter communications in operational missions and training exercises. This non-recurring MILCON Shore Enhancement requirement will ensure continued capability to the fleet during the transition between the old and new facility at Naval Computer and Telecommunications Area Master Station (NCTAMS) Atlantic.

[P5 / (NR112) Commercial Broadband Satellite Assured C2 Modems]: CBSP Assured C2 Modems: Directly support Assured Command and Control (C2) posture, SATCOM reliability, space resiliency via band diversity and redundancy for MILSATCOM.

FY21 continues the procurement of modems and peripheral equipment to the CBSP terminal to provide technology refresh and directly support Assured Command and Control (C2) communications.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: 237		

[P5 / (NR112) CBSP Ka Kits]: CBSP KA Kits: Current National focus is on highly contested environments and has highlighted a growing need of protected communications, specifically in a satellite denied environment. Assured Command and Control (AC2) Ka Band Kits will increase band diversity and access to Wideband Global SATCOM (WGS) and mitigates risk of loss of Beyond Line of Sight (BLOS) wideband communications in a SATCOM-denied environment for the CBSP Program. With this capability, CBSP will be able to reduce risk of loss of C2 communications on Unit Level Variant (ULV)/ Field Level Variant (FLV) class Combatant ships in a denied environment which would assure Command and Control (C2) including ISR, NIPR/SIPR, VTC, and other critical capabilities.

In FY21, CBSP continues the procurement and installation of 5 ULV Ka Band Kits. CBSP will commence procurement and installation of 6 Force Level Kits (FLV) Ka Band Kits.

[P3A / (NR117) Global Broadcast Service (GBS)]: GLOBAL BROADCAST SERVICE (GBS - NR117): GBS is a Joint Military Satellite Communications (MILSATCOM) program with the Air Force as Executive Agent for all services. GBS provides a continuous, high speed, one way information flow of high volume data to units ashore, afloat or special operations. GBS supports routine operations, training and military exercises, special activities, crises, situational awareness, weapons targeting, and reconnaissance. Deployment of GBS internet protocol (IP) terminals will allow expanded use of military intelligence collection in a broader spectrum using MILSATCOM architecture. The Navy GBS Split IP effort enables near-real-time duplex asymmetric communications connectivity to ships/subs. GBS plays a pivotal role to support the Assured Command and Control (AC2) environment.

[P3A - 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat]: CBSP is the U.S. Navy Commercial Satellite Communications (SATCOM) program that provides the only source of wideband SATCOM to Patrol Coastal (PC) and Mine Countermeasure (MCM) Ships, diversity for Military Satellite Communications (MILSATCOM) on Unit Level Variant (ULV) ships, and augments MILSATCOM on Force Level Variant (FLV) ships. CBSP will support the procurement and installation of a commercial terminal and service architecture that significantly increase data throughput, Navy A2AD posture, and communication reliability. CBSP also increases space resiliency by providing band diversity, assured access, and redundancy for MILSATCOM. Included in the program are Small Ship Variant (SSV - Patrol Coastal and Mine Countermeasure Ships), Unit Level Variant (ULV - including Guided Missile Destroyers and Guided Missile Frigates), and Force Level Variant (FLV - large combatant ships including Carriers).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: 237

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Satellite Communications Systems	P-5a			- / 942.602	- / 10.700	- / 5.255	- / 13.879	- / 0.000	- / 13.879
P-3a	1 / (NR117) Global Broadcast Service (GBS) (TBD)				- / 200.227	- / 19.487	- / 23.873	- / 18.997	- / 0.000	- / 18.997
P-3a	2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat (upgrade)				- / 126.477	- / 11.715	- / 15.956	- / 14.545	- / 0.000	- / 14.545
P-40	**Total Gross/Weapon System Cost**				**- / 1,269.306**	**- / 41.902**	**- / 45.084**	**- / 47.421**	**- / 0.000**	**- / 47.421**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Satellite Communications Systems	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / (NR117) Global Broadcast Service (GBS) (TBD)				- / 10.259	- / 7.562	- / 5.330	- / 5.151	- / 0.746	- / 291.632
P-3a	2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat (upgrade)				- / 15.238	- / 15.664	- / 15.874	- / 16.161	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 38.762**	**- / 33.897**	**- / 29.412**	**- / 29.684**	**- / 2.100**	**- / 1,537.568**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The FY21 funding request increases meet Assured Command and Control (AC2) requirements for Global Broadcast System (GBS) Afloat Terminals and Commercial Broadband Satellite Program (CBSP) Terminals. Specifically, the GBS AC2 increase resides in the Engineering Change Order (ECO) and adds X-Band reception to provide coverage to Naval Forces when Ka-band beam coverage is not available or to support higher priority missions. The ECO procures hardware, engineering services and installations to support critical X-Band capability to the Fleet. CBSP increase includes additional Ka Kit procurements and installations. Ka kits increase band diversity and access to wide band Global SATCOM providing bandwidth capability that mitigates beyond line of sight (BLOS)

The FY21 funding request continues procurement of both Afloat and Portable Global Broadcast System (GBS) Program Receive Terminals and an Engineering Change Order (ECO) to meet the Navy's Microsoft Windows 10 requirement Cyber Security Mandate (dated 08 December 2016). The ECO procures Public Key Infrastructure (PKI) hardware, engineering services and installations to support critical information assurance to the Fleet.

The FY21 funding request continues Commercial Broadband Satellite Program (CBSP) procurement and installation of Unit Level Variant (ULV) and Force Level Variant (FLV) Terminals. Continues procurement and installation of CBSP modem technical refresh and Ka Kit upgrades. All of which are in direct support of Assured Command and Control (AC2) U.S. Navy afloat mission objectives.

FY21 funding request is for the required engineering changes necessary to implement cybersecurity upgrades and cryptographic modernization for increased performance and security for the Demand Assigned Multiple Access (DAMA)/ MINI DAMA system.

Joint UHF MILSATCOM Networks Integrated Control System (JMINI CS) increase in FY21 due to funds transfer from Shore IW Platform (BLI 8161) to procure, integrate and install the JMINI CS capability at the new NCTAMS Atlantic Facility in alignment with the Facilities Beneficiary Occupancy Date.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3215 / Satellite Communications Systems	Item Number / Title [DODIC]: 1 / Satellite Communications Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	942.602	10.700	5.255	13.879	0.000	13.879
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	942.602	10.700	5.255	13.879	0.000	13.879
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**942.602**	**10.700**	**5.255**	**13.879**	**0.000**	**13.879**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Flyaway - Consolidated Prior Year Requirements Cost																		
Recurring Cost																		
1.1.1) Consolidated PY Requirements (1)	-	-	934.606	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*934.606*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost	**-**	**-**	***934.606***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - (NR101) DAMA/MINI DAMA Engineering Change Order Cost																		
Non Recurring Cost																		
2.1.1) DAMA/ MINI DAMA Engineering Change Order (2)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	4.002	-	-	0.000	-	-	4.002
Subtotal: Non Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*4.002*	-	-	*0.000*	-	-	*4.002*
Subtotal: Hardware - (NR101) DAMA/MINI DAMA Engineering Change Order Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***4.002***	**-**	**-**	***0.000***	**-**	**-**	***4.002***
Hardware - (NR118) JMINI CS Shore Cost																		
Non Recurring Cost																		
4.1.1) MILCON P-913 Procurement (3)	-	-	0.000	-	-	0.000	-	-	1.400	-	-	2.160	-	-	0.000	-	-	2.160
Subtotal: Non Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*1.400*	-	-	*2.160*	-	-	*0.000*	-	-	*2.160*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3215 / Satellite Communications Systems	Item Number / Title [DODIC]: 1 / Satellite Communications Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - (NR118) JMINI CS Shore Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***1.400***	**-**	**-**	***2.160***	**-**	**-**	***0.000***	**-**	**-**	***2.160***
Hardware - (NR112) Commercial Broadband Satellite Assured C2 Modems Cost																		
Recurring Cost																		
5.1.1) Assured C2 Modems(†) (4)	18.007	150	2.701	17.250	112	1.932	19.615	52	1.020	20.169	59	1.190	-	-	0.000	20.169	59	1.190
5.1.2) Assured C2 Modem Upgrades - Not Installed	-	-	0.540	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*3.241*	-	-	*1.932*	-	-	*1.020*	-	-	*1.190*	-	-	*0.000*	-	-	*1.190*
Subtotal: Hardware - (NR112) Commercial Broadband Satellite Assured C2 Modems Cost	**-**	**-**	***3.241***	**-**	**-**	***1.932***	**-**	**-**	***1.020***	**-**	**-**	***1.190***	**-**	**-**	***0.000***	**-**	**-**	***1.190***
Hardware - (NR112) CBSP Ka Kits Cost																		
Recurring Cost																		
6.1.1) Unit Level Variant(†) (5)	-	-	0.000	251.667	3	0.755	265.000	2	0.530	268.200	5	1.341	-	-	0.000	268.200	5	1.341
6.1.2) Force Level Variant(†) (6)	-	-	0.000	-	-	0.000	-	-	0.000	505.833	6	3.035	-	-	0.000	505.833	6	3.035
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.755*	-	-	*0.530*	-	-	*4.376*	-	-	*0.000*	-	-	*4.376*
Subtotal: Hardware - (NR112) CBSP Ka Kits Cost	**-**	**-**	***0.000***	**-**	**-**	***0.755***	**-**	**-**	***0.530***	**-**	**-**	***4.376***	**-**	**-**	***0.000***	**-**	**-**	***4.376***
Support - (NR555) Production Support Cost																		
7.1) (CBSP) AC2 Modems Production Support	-	-	0.210	-	-	0.120	-	-	0.068	-	-	0.070	-	-	0.000	-	-	0.070
7.2) (CBSP) Ka Kits Production Support	-	-	0.000	-	-	0.041	-	-	0.029	-	-	0.238	-	-	0.000	-	-	0.238
7.3) (CBSP) Ka Kit Non-Recurring Engineering (NRE)	-	-	0.000	-	-	3.562	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
7.5) MILCON P-913 Shore Based Enterprise Network Enhancements-Organic	-	-	0.666	-	-	0.000	-	-	0.157	-	-	0.240	-	-	0.000	-	-	0.240
Subtotal: Support - (NR555) Production Support Cost	**-**	**-**	***0.876***	**-**	**-**	***3.723***	**-**	**-**	***0.254***	**-**	**-**	***0.548***	**-**	**-**	***0.000***	**-**	**-**	***0.548***
Support - (NR777) Install (Afloat) Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3215 / Satellite Communications Systems	Item Number / Title [DODIC]: 1 / Satellite Communications Systems
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
8.1) CBSP AC2 Modems Install	-	-	3.879	-	-	4.148	-	-	1.852	-	-	0.840	-	-	0.000	-	-	0.840
8.2) CBSP Ka Kits - ULV Install	-	-	0.000	-	-	0.090	-	-	0.063	-	-	0.159	-	-	0.000	-	-	0.159
8.3) CBSP Ka Kits - FLV Install	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.425	-	-	0.000	-	-	0.425
Subtotal: Support - (NR777) Install (Afloat) Cost	**-**	**-**	***3.879***	**-**	**-**	***4.238***	**-**	**-**	***1.915***	**-**	**-**	***1.424***	**-**	**-**	***0.000***	**-**	**-**	***1.424***
Support - (NR777) DSA (Afloat) Cost																		
9.1) CBSP Ka Kits DSA	-	-	0.000	-	-	0.052	-	-	0.136	-	-	0.179	-	-	0.000	-	-	0.179
Subtotal: Support - (NR777) DSA (Afloat) Cost	**-**	**-**	***0.000***	**-**	**-**	***0.052***	**-**	**-**	***0.136***	**-**	**-**	***0.179***	**-**	**-**	***0.000***	**-**	**-**	***0.179***
Gross/Weapon System Cost	**-**	**-**	**942.602**	**-**	**-**	**10.700**	**-**	**-**	**5.255**	**-**	**-**	**13.879**	**-**	**-**	**0.000**	**-**	**-**	**13.879**

(†) indicates the presence of a P-5a

Footnotes:

(1) Consolidated Prior Year Requirements costs of $934,606K which includes GBS Modem Upgrades, GBS Interim Modem Upgrades, GBS Shore Pre-Installation Design, SHF, NESP, CBSP, and Spectral Warrior (SW) / Spider Net (SN), DAMA/MINI DAMA(LEGACY), JMINI Control System shore, CBSP Small Ship Variant (SSV)and JMINI CS Shore install dollars.

(2) Mini-DAMA FY21 OPN funds the engineering required for the crypto modernization of the MD-1324 modems that must be completed by FY24. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6510.02E directs the military Services to modernize National Security Agency (NSA) certified cryptographic products and algorithms prior to published Last Year of Use dates to ensure secure, interoperable information sharing. NSA's published de-certification and cease key dates for crypto algorithm contained in UHF legacy communications systems.

(3) [NR118 Hardware] Funding supports procurement of mission related JMINI CS equipment at new NCTAMS Atlantic facility.

(4) FY21 CBSP Qty 59 modem procurements and installations support Afloat units comprising of Force Level and Unit Level ship variants.

(5) FY21 supports the procurement and installation of 5 Unit Level Variant Ka Kits in an effort to reduce risk of loss of C2 communications on Unit Level Variant (ULV) class Combatant ships in a denied environment which would assure Command and Control (C2).

(6) FY21 supports the procurement and installation of 6 Force Level Variant Ka Kits in an effort to reduce risk of loss of C2 communications on Force Level Variant (FLV) class Combatant ships in a denied environment which would assure Command and Control (C2).

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3215 / Satellite Communications Systems	Item Number / Title [DODIC]: 1 / Satellite Communications Systems

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
5.1.1) Assured C2 Modems		2019	COMTECH / Tempe, AZ	SS / IDIQ	** NO PCO **	Jan 2019	Apr 2019	112	17.250	Y		Dec 2017
5.1.1) Assured C2 Modems		2020	COMTECH / Tempe, AZ	SS / IDIQ	** NO PCO **	Jan 2020	Apr 2020	52	19.615	Y		Dec 2017
5.1.1) Assured C2 Modems		2021	COMTECH / Tempe, AZ	SS / IDIQ	** NO PCO **	Jan 2021	Apr 2021	59	20.169	Y		Dec 2017
6.1.1) Unit Level Variant		2019	Harris Corporation - CBSP / Palm Beach, FL	C / FFP	** NO PCO **	Dec 2018	Mar 2019	3	251.667	Y		Jun 2018
6.1.1) Unit Level Variant		2020	Harris Corporation - CBSP / Palm Beach, FL	C / FFP	** NO PCO **	Dec 2019	Mar 2020	2	265.000	Y		Jun 2018
6.1.1) Unit Level Variant		2021	Harris Corporation - CBSP / Palm Beach, FL	C / FFP	** NO PCO **	Dec 2020	Mar 2021	5	268.200	Y		Jun 2018
6.1.2) Force Level Variant		2021	Harris Corporation - CBSP / Palm Beach, FL	C / FFP	** NO PCO **	Dec 2020	Mar 2021	6	505.833	Y		Jun 2020

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 1 / (NR117) Global Broadcast Service (GBS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	200.227	19.487	23.873	18.997	0.000	18.997	10.259	7.562	5.330	5.151	0.746	291.632
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	200.227	19.487	23.873	18.997	0.000	18.997	10.259	7.562	5.330	5.151	0.746	291.632
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**200.227**	**19.487**	**23.873**	**18.997**	**0.000**	**18.997**	**10.259**	**7.562**	**5.330**	**5.151**	**0.746**	**291.632**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

GLOBAL BROADCAST SERVICE (GBS - NR117): GBS is a Joint Military Satellite Communications (MILSATCOM) program with the Air Force as Executive Agent for all services. GBS provides a continuous, high speed, one way information flow of high volume data to units ashore, afloat or special operations. GBS supports routine operations, training and military exercises, special activities, crises, situational awareness, weapons targeting, and reconnaissance. Deployment of GBS Internet Protocol (IP) terminals will allow expanded use of military intelligence collection in a broader spectrum using MILSATCOM architecture. The Navy GBS Split IP effort enables near-real-time duplex asymmetric communications connectivity to ships/subs. GBS plays a pivotal role to support the AC2 environment.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 1 / (NR117) Global Broadcast Service (GBS)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: [No Model Specified]	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: (NR117) Global Broadcast Service (GBS)												
B Kits												
Recurring												
1.1.1) Afloat Receive Terminal - NonOrganic [7]	157 / 101.782	13 / 6.560	20 / 10.294	16 / 8.400	- / -	16 / 8.400	4 / 2.142	2 / 1.092	4 / 2.228	4 / 2.231	- / -	220 / 134.729
1.1.2) Portable Receive Terminal - Organic [8]	57 / 12.700	40 / 9.609	35 / 8.580	8 / 2.000	- / -	8 / 2.000	9 / 2.295	10 / 2.601	9 / 2.388	8 / 2.165	- / -	176 / 42.338
Subtotal: Recurring	*- / 114.482*	*- / 16.169*	*- / 18.874*	*- / 10.400*	*- / -*	*- / 10.400*	*- / 4.437*	*- / 3.693*	*- / 4.616*	*- / 4.396*	*- / 0.000*	*- / 177.067*
Subtotal: (NR117) Global Broadcast Service (GBS)	*214 / 114.482*	*53 / 16.169*	*55 / 18.874*	*24 / 10.400*	*- / -*	*24 / 10.400*	*13 / 4.437*	*12 / 3.693*	*13 / 4.616*	*12 / 4.396*	*- / -*	*396 / 177.067*
Subtotal: Procurement, All Modification Items	*- / 114.482*	*- / 16.169*	*- / 18.874*	*- / 10.400*	*- / -*	*- / 10.400*	*- / 4.437*	*- / 3.693*	*- / 4.616*	*- / 4.396*	*- / 0.000*	*- / 177.067*
Support *(All Modification Items)*												
2.1) Production Support	- / 22.152	- / 0.878	- / 1.150	- / 0.567	- / 0.000	- / 0.567	- / 0.242	- / 0.221	- / 0.232	- / 0.209	- / -	- / 25.651
2.2) Afloat Receive Terminal DSA [9]	- / 9.670	- / 0.954	- / 0.851	- / 1.072	- / 0.000	- / 1.072	- / 0.413	- / 0.197	- / 0.124	- / 0.180	- / -	- / 13.461
2.3) Engineering Change Order [10]	- / 7.951	- / 0.350	- / 0.846	- / 3.412	- / 0.000	- / 3.412	- / 3.100	- / 3.100	- / 0.000	- / 0.000	- / -	- / 18.759
Subtotal: Support	*- / 39.773*	*- / 2.182*	*- / 2.847*	*- / 5.051*	*- / -*	*- / 5.051*	*- / 3.755*	*- / 3.518*	*- / 0.356*	*- / 0.389*	*- / 0.000*	*- / 57.871*
Installation												
Modification Item 1 of 1: (NR117) Global Broadcast Service (GBS)	- / 45.972	- / 1.136	- / 2.152	- / 3.546	- / 0.000	- / 3.546	- / 2.067	- / 0.351	- / 0.358	- / 0.366	- / 0.746	- / 56.694
Subtotal: Installation	*- / 45.972*	*- / 1.136*	*- / 2.152*	*- / 3.546*	*- / -*	*- / 3.546*	*- / 2.067*	*- / 0.351*	*- / 0.358*	*- / 0.366*	*- / 0.746*	*- / 56.694*
Total												
Total Cost (Procurement + Support + Installation)	**200.227**	**19.487**	**23.873**	**18.997**	**0.000**	**18.997**	**10.259**	**7.562**	**5.330**	**5.151**	**0.746**	**291.632**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 1 / (NR117) Global Broadcast Service (GBS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (NR117) Global Broadcast Service (GBS)

Manufacturer Information

Manufacturer Name: RAYTHEON — Manufacturer Location: Sterling, VA

Administrative Leadtime *(in Months)*: 2 — Production Leadtime *(in Months)*: 5

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	May 2019	May 2020	May 2021				

Manufacturer Name: Aqyr Technologies, Inc. (11) — Manufacturer Location: Nashua, NH

Administrative Leadtime *(in Months)*: 2 — Production Leadtime *(in Months)*: 3

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	Mar 2019	Mar 2020	Mar 2021				

Installation Information

Method of Implementation: [none specified]:: Installation Name: Afloat Receive Terminal

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	157 / 45.972	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	157 / 45.972
FY 2019	- / -	7 / 1.136	6 / 0.993	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 2.129
FY 2020	- / -	- / -	7 / 1.159	13 / 2.195	0 / 0.000	13 / 2.195	- / -	- / -	- / -	- / -	0 / 0.000	20 / 3.354
FY 2021	- / -	- / -	- / -	8 / 1.351	0 / 0.000	8 / 1.351	8 / 1.378	- / -	- / -	- / -	0 / 0.000	16 / 2.729
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.689	- / -	- / -	- / -	0 / 0.000	4 / 0.689
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.351	- / -	- / -	0 / 0.000	2 / 0.351
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.358	2 / 0.366	0 / 0.000	4 / 0.724
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.746	4 / 0.746
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	157 / 45.972	7 / 1.136	13 / 2.152	21 / 3.546	0 / 0.000	21 / 3.546	12 / 2.067	2 / 0.351	2 / 0.358	2 / 0.366	4 / 0.746	220 / 56.694

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 1 / (NR117) Global Broadcast Service (GBS)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (NR117) Global Broadcast Service (GBS)

Installation Information

Method of Implementation: [none specified]:: Installation Name: Afloat Receive Terminal

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	157	-	-	4	3	3	3	4	3	7	6	6	2	4	4	4	-	-	-	2	-	-	-	2	-	2	-	-	-	4	220
Out	157	-	-	-	7	-	6	-	7	-	7	6	8	-	8	-	4	-	-	-	2	-	-	-	2	-	2	-	-	4	220

Method of Implementation (Organic): Portable Receive Terminal - Not Installed **Installation Quantity:** 176

Footnotes:

(7) 1. FY 2021 GBS Afloat Receive Terminal Procurement and Installation continues fielding requirements for Resilient Command and Control (RC2) that provides support to Fleet missions: Strike & Special Operations, Imagery and Intel Data (Live Streaming Video).

(8) 1. GBS Portable Receive Terminals are turn-key and therefore do not have installation costs associated with them.

(9) Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year. FY20 Congressional Mark of $757K applied to FY20 DSA for GBS Afloat Receive Terminal DSA Previously Funded.

(10) Engineering Change Order (ECO) is required to implement Cybersecurity upgrades to increase system performance for fielded GBS Afloat Receive Terminals and Portable Receive Terminals. FY19-21 procures and installs Win 10 PKI upgrades and performs associated integration, assembly and test. Increase from FY20 to FY21 supports GBS ECO to add X-Band reception capability to provide coverage to Naval Forces when Ka-band beam coverage is not available or to support higher priority missions. Initial operating capability of this engineering changes begins fielding in FY21.

(11) Aqyr Techologies support Portable Receive Terminals

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	126.477	11.715	15.956	14.545	0.000	14.545	15.238	15.664	15.874	16.161	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	126.477	11.715	15.956	14.545	0.000	14.545	15.238	15.664	15.874	16.161	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**126.477**	**11.715**	**15.956**	**14.545**	**0.000**	**14.545**	**15.238**	**15.664**	**15.874**	**16.161**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

CBSP is the U.S. Navy Commercial SATCOM program that provides the only source of wideband SATCOM to Patrol Coastal (PC) and Mine Countermeasure (MCM) Ships, diversity for MILSATCOM on Unit Level Variant (ULV) ships, and augments MILSATCOM on Force Level Variant (FLV) ships. CBSP will support the procurement and installation of a commercial terminal and service architecture that significantly increase data throughput, Navy A2AD posture, and communication reliability. CBSP also increases space resiliency by providing band diversity, assured access, and redundancy for MILSATCOM. Included in the program are Small Ship Variant (SSV - Patrol Coastal and Mine Countermeasure Ships), Unit Level Variant (ULV - including Guided Missile Destroyers and Guided Missile Frigates), and Force Level Variant (FLV - large combatant ships including Carriers).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Submarines, ships	**Modification Type:** upgrade	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: (NR112) Commercial Broadband Satellite program (CBSP) - Afloat												
B Kits												
Recurring												
1.1.1) Unit Level Variant (ULV) - NonOrganic [12]	31 / 30.476	6 / 5.622	5 / 4.730	7 / 6.839	- / -	7 / 6.839	5 / 5.010	3 / 3.066	7 / 7.297	9 / 9.570	Continuing	Continuing
1.1.2) Force Level Variant (FLV) - NonOrganic [13]	24 / 40.684	- / -	1 / 1.914	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 42.598
Subtotal: Recurring	*- / 71.160*	*- / 5.622*	*- / 6.644*	*- / 6.839*	*- / -*	*- / 6.839*	*- / 5.010*	*- / 3.066*	*- / 7.297*	*- / 9.570*	*Continuing*	*Continuing*
Subtotal: (NR112) Commercial Broadband Satellite program (CBSP) - Afloat	*55 / 71.160*	*6 / 5.622*	*6 / 6.644*	*7 / 6.839*	*- / -*	*7 / 6.839*	*5 / 5.010*	*3 / 3.066*	*7 / 7.297*	*9 / 9.570*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 71.160*	*- / 5.622*	*- / 6.644*	*- / 6.839*	*- / -*	*- / 6.839*	*- / 5.010*	*- / 3.066*	*- / 7.297*	*- / 9.570*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Engineering Change Orders [14]	- / 2.004	- / 1.253	- / 1.326	- / 0.156	- / -	- / 0.156	- / 1.007	- / 1.433	- / 0.178	- / 0.506	Continuing	Continuing
2.2) Production Support	- / 0.275	- / 0.337	- / 0.448	- / 0.410	- / -	- / 0.410	- / 0.347	- / 0.211	- / 0.506	- / 0.659	Continuing	Continuing
2.3) Other (DSA) [15]	- / 9.532	- / 0.969	- / 1.418	- / 1.830	- / -	- / 1.830	- / 2.448	- / 2.215	- / 1.207	- / 2.016	Continuing	Continuing
Subtotal: Support	*- / 11.811*	*- / 2.559*	*- / 3.192*	*- / 2.396*	*- / -*	*- / 2.396*	*- / 3.802*	*- / 3.859*	*- / 1.891*	*- / 3.181*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: (NR112) Commercial Broadband Satellite program (CBSP) - Afloat	- / 43.506	- / 3.534	- / 6.120	- / 5.310	- / 0.000	- / 5.310	- / 6.426	- / 8.739	- / 6.686	- / 3.410	Continuing	Continuing
Subtotal: Installation	*- / 43.506*	*- / 3.534*	*- / 6.120*	*- / 5.310*	*- / -*	*- / 5.310*	*- / 6.426*	*- / 8.739*	*- / 6.686*	*- / 3.410*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**126.477**	**11.715**	**15.956**	**14.545**	**0.000**	**14.545**	**15.238**	**15.664**	**15.874**	**16.161**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: (NR112) Commercial Broadband Satellite program (CBSP) - Afloat

Manufacturer Information

Manufacturer Name: Harris - CBSP FLV | Manufacturer Location: Palm Beach, FL

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 6

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	Jun 2019	Jun 2020	Jun 2021				

Installation Information

Method of Implementation: Tiger Team:: Installation Name: Small Ship Variant (SSV), Unit Level Variant (ULV) and Force Level V

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	55 / 43.506	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	55 / 43.506
FY 2019	- / -	3 / 3.534	3 / 3.672	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 7.206
FY 2020	- / -	- / -	2 / 2.448	4 / 4.260	0 / 0.000	4 / 4.260	- / -	- / -	- / -	- / -	0 / 0.000	6 / 6.708
FY 2021	- / -	- / -	- / -	1 / 1.050	0 / 0.000	1 / 1.050	6 / 6.426	- / -	- / -	- / -	Continuing	Continuing
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 5.462	- / -	- / -	0 / 0.000	5 / 5.462
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.277	- / -	- / -	0 / 0.000	3 / 3.277
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 6.686	1 / 1.137	0 / 0.000	7 / 7.823
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.273	7 / 8.115	9 / 10.388
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	55 / 43.506	3 / 3.534	5 / 6.120	5 / 5.310	0 / 0.000	5 / 5.310	6 / 6.426	8 / 8.739	6 / 6.686	3 / 3.410	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	55	-	-	2	1	-	3	1	1	1	3	1	-	3	3	-	-	3	2	3	-	-	-	6	-	1	-	2	-	Cont.	Cont.
Out	55	-	-	-	2	1	-	3	1	1	1	3	1	-	3	3	-	-	5	-	3	-	-	-	6	-	1	-	2	Cont.	Cont.

Footnotes:

(12) 1. FY19-FY24 Engineering Change Order (ECO) updates are re-prioritized to adjudicate FY19-FY24 CBSP Terminal Install and DSA funding levels required to complete scheduled installations to reflect updated fielding plan synchronization. 2. FY21 installation cost increase compared to FY20 is driven by CBSP shipboard configuration type and platform type. 3. FY21 procures Qty 7 CBSP Unit Level Variant (ULV) terminals to meet DDG ship class fielding requirements.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3215 / Satellite Communications Systems	**Modification Number / Title:** 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(13) 1. Force Level Variant (FLV) terminals include single and dual antenna configurations which influences average unit cost.

(14) Engineering changes required to implement bandwidth efficiency technologies to increase system performance for fielded Small Ship Variants (SSV) and Force Level Variants (FLV).

(15) Pre-Installation Design Services Allocation (DSA) are required in order to complete ship check and installation drawings for installation planning and is performed 6-12 months prior to installation start. Post Installation DSA support requirements include drawings closeout. DSA costs will fluctuate each FY as it is a factor of the number of installations in any given fiscal year.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: 290

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,149.663	108.985	76.715	64.552	0.000	64.552	30.522	17.413	21.033	21.444	73.062	1,563.389
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,149.663	108.985	76.715	64.552	0.000	64.552	30.522	17.413	21.033	21.444	73.062	1,563.389
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,149.663**	**108.985**	**76.715**	**64.552**	**0.000**	**64.552**	**30.522**	**17.413**	**21.033**	**21.444**	**73.062**	**1,563.389**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.231	0.159	0.101	-	0.101	-	0.205	0.317	0.134	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Navy Multiband Terminal (NMT) System provides funds for procurement of ship, submarine, and shore protected and wideband Military Satellite Communications (MILSATCOM) terminals via earth orbiting relay satellites in the Super High Frequency, Ka, and Extremely High Frequency (EHF) bands. The NMT provides warfighters with the assured, jam resistant, secure SATCOM for message traffic, data transfer and secure voice communications. These procurements are scheduled to meet the satellite communications requirements established by the Chief of Naval Operations in the Fleet Communications Planning and Programming documents.

NAVY MULTIBAND TERMINAL (NMT - NS108): The NMT program is the next generation maritime military satellite communications terminal. The NMT Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. NMT multiband capabilities communicate two way Ka-Band on Wideband Global SATCOM (WGS) and shipboard and submarine terminals to communicate with X-Band using the Defense Satellite Communications System and WGS. NMT is compatible with today's Navy Low Data Rate/Medium Data Rate terminals, X-Band terminals and will sustain the MILSATCOM architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on the capabilities of both the Military Strategic and Tactical Relay System (MILSTAR) and WGS system by equipping the warfighters with the assured, jam resistant, secure communications as described in the Operational Requirements Document (Wideband Gapfiller System ORD, AFSPC ORD 004-99, May 3, 2000) for the joint AEHF Satellite Communications and WGS System.

The NMT protected system AN/WSC-9 V (Variant) is comprised of three configurations for ships, submarines and shore sites known as Communication Groups. Terminal Communication Groups will integrate protected and wideband signal processing to multiband Antenna Groups. The Antenna Groups align to the specific Terminal Variant for ship, submarine and shore platforms and provides the SATCOM capabilities known as Q/Ka and X/Ka assigned to platforms. NMT includes the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP) and supports increased data transfers for the Automated Digital Network System (ADNS) router architecture supporting improved Quality of Service (QoS) capability, smaller form factor and easier integration into operational environments, further supporting network user access to protected MILSATCOM connectivity. Technical refresh of modems and the associated architectures will directly support Assured Command and Control (AC2) posture, SATCOM reliability, space resiliency via band diversity and redundancy. AC2 modems are an upgrade to enable the use of Wideband Global Satellite (WGS) X-Band (ship/submarine transmit and receive) and Ka-band (shore receive and transmit) resources to maintain link connectivity to provide assured access to mission critical communications in jamming environments.

This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is
required for National Command and Control capability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: 290		

[P5 / X/Ka Backfits]: X/Ka Backfits continue to be fielded on platforms with NMT Q/Ka Ship terminals that were procured during Low Rate Initial Production (LRIP) and require the wideband capability that the X/Ka Antenna Group provides. The X/Ka hardware was unavailable during the first two years of production but is required to provide the full Wideband capability to the Fleet.

The NMT Budget includes the breakout of Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) costs. IA&T efforts are performed once X/Ka Backfit terminals and antennas are delivered from Raytheon Production Facilities to the government site NIWC Atlantic, Charleston SC. NIWC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals and antennas required for NMT shore platforms. SOVT efforts are performed by NIWC Atlantic, Charleston, SC and NIWC Pacific, San Diego, CA and validate the NMT system is operational post installation on ashore platforms.

[P5 / NMT Ashore Antennas]: Shore Antennas comprise of a Q Band configuration to provide SATCOM capabilities. The original NMT acquisition strategy was to re-use legacy FOT Shore Antennas that would be refurbished. However, antennas coming in for overhaul were in worse than expected condition; all required major overhaul parts including bearings, cable assemblies, motors, slip rings, and rotary joints. Refurbished FOT antennas posed long-term supportability problems due to obsolescence. Therefore, in Prior Year procurements (PY FY15), the program office procured 17 Shore antennas to provide optimal capability to the Fleet.

Similar to the X/Ka Backfit hardware, the Budget includes the breakout of Integration, Assembly and Test (IA&T) efforts which are performed once the Ashore Antennas are delivered from Raytheon Production Facilities to the government site at NIWC Atlantic, Charleston SC. NIWC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the antennas required for NMT shore platforms. NMT Installations include System Operational Verification Test (SOVT) which are performed by NIWC Atlantic, Charleston, SC and NIWC Pacific, San Diego, CA and validate the NMT antenna is operational post installation on shore sites.

[P5 / ATIP]: Initial NMT procurements included the Time Division Multiple Access (TDMA) Interface Processor (TIP) pending the development of the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP). Although ATIP is required to receive NMT's full netted communications capability over the Extreme Data Rate (XDR), it also is fielded independently of NMT as a Back-Fit to replace the legacy TIP's from the Fleet thereby improving Cyber Security posture and Reliability of the system. ATIPs require Integration, Assembly and Test (IA&T). IA&T efforts are performed once ATIPS are delivered from COMTECH to the government sites at NIWC Pacific, San Diego, CA. NIWC Pacific serves as lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the modems required for NMT ship and submarine afloat platforms. NMT Installation updates include System Operational Verification Test (SOVT). SOVT efforts are performed by NIWC Pacific, San Diego, CA and validate ATIPS are operational post installation on afloat platforms and ashore sites.

[P5 / Wideband Anti-Jam Modem System (WAMS)]: The Wideband Anti-Jam Modem System (WAMS) is a Navy technology upgrade that enhances communication capability of shipboard and submarine NMTs by providing wideband Anti-Jam (AJ) Satellite Communication throughput over Wideband Global SATCOM (WGS). WAMS is a major contributor in supporting the National Defense Strategy by investing in resilience to provide assured communications capabilities. WAMS enables space segment Anti Jam (AJ) diversity (EHF/AEHF and WGS), thus enabling NMT ships and submarines equipped with the modem to operate in wideband links closer to threat jammers.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 290

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Navy Multiband Terminal (NMT)				- / 232.466	- / 12.456	- / 9.186	- / 4.673	- / 0.000	- / 4.673
P-3a	1 / 3216 Navy Multiband Terminal (NMT) - Afloat (TBD)				- / 789.667	- / 60.380	- / 41.527	- / 38.948	- / 0.000	- / 38.948
P-3a	2 / 3216 Navy Multiband Terminal (NMT) - Ashore (TBD)				- / 116.016	- / 9.654	- / 15.356	- / 1.950	- / 0.000	- / 1.950
P-3a	3 / Assured C2 Modems (TBD)				- / 11.514	- / 26.495	- / 10.646	- / 18.981	- / 0.000	- / 18.981
P-40	**Total Gross/Weapon System Cost**				**- / 1,149.663**	**- / 108.985**	**- / 76.715**	**- / 64.552**	**- / 0.000**	**- / 64.552**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-5	1 / Navy Multiband Terminal (NMT)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / 3216 Navy Multiband Terminal (NMT) - Afloat (TBD)				- / 13.758	- / 0.000	- / 0.000	- / 0.000	- / 73.062	- / 1,017.342
P-3a	2 / 3216 Navy Multiband Terminal (NMT) - Ashore (TBD)				- / 10.842	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 153.818
P-3a	3 / Assured C2 Modems (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 67.636
P-40	**Total Gross/Weapon System Cost**				**- / 30.522**	**- / 17.413**	**- / 21.033**	**- / 21.444**	**- / 73.062**	**- / 1,563.389**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The FY21 funding request refines estimates for the procurement of 2 NMT terminal and the installation 5 afloat and 1 ashore NMT terminals for a total of 6 NMT terminals to align with earliest remaining installation availabilities. FY21 continues the procurement and installation of NMT terminals, AC2 modems, ATIPs, and X/Ka Back-Fits. This exhibit has been updated to allow the program to maximize remaining Economic Order Quantity discounts reducing overall cost to the Navy and to meet Full Operational Capability (FOC) in FY23.

The hardware being procured supports specific ship platform variants. Should an installation slip, the hardware for that platform cannot necessarily be aligned to a different platform creating an appearance of ahead of need for prior year procurements.

The following efforts were moved from the P-3a to the P-5 at FY 2020 President's Budget requeste due to budget year costs falling below the $5M threshold and includes:
- X/Ka Backfits
- NMT Ashore Antennas
- ATIP
- Wideband Anti-Jam Modem System (WAMS)(Starting in FY23)

All associated costs (procurement, install, support) are broken out accordingly on the P-5 to ensure no loss of budget details.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Item Number / Title [DODIC]:** 1 / Navy Multiband Terminal (NMT)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	232.466	12.456	9.186	4.673	0.000	4.673
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	232.466	12.456	9.186	4.673	0.000	4.673
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**232.466**	**12.456**	**9.186**	**4.673**	**0.000**	**4.673**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - X/Ka Backfits Cost																		
Recurring Cost																		
1.1.1) X/Ka Backfits	1,426.958	48	68.494	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*68.494*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - X/Ka Backfits Cost	**-**	**-**	***68.494***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - NMT Ashore Antennas Cost																		
Recurring Cost																		
2.1.1) NMT Ashore Antennas	817.824	17	13.903	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*13.903*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - NMT Ashore Antennas Cost	**-**	**-**	***13.903***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - ATIP Cost																		
Recurring Cost																		
3.1.1) Advanced TDMA Interface Processors (ATIP)	97.897	312	30.544	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*30.544*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - ATIP Cost	**-**	**-**	***30.544***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - NS555 Production Support Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Item Number / Title [DODIC]:** 1 / Navy Multiband Terminal (NMT)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
5.1) X/Ka Backfit Integration, Assembly & Test (IA&T) (1)	-	-	1.879	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.2) Ashore Antenna IA&T	-	-	2.068	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.3) ATIP IA&T	-	-	1.985	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - NS555 Production Support Cost	**-**	**-**	***5.932***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - NS777 FMP Install (Afloat) Cost																		
6.1) X/Ka Backfit System Operational Verification Test (SOVT)	-	-	2.646	-	-	0.086	-	-	0.087	-	-	0.000	-	-	0.000	-	-	0.000
6.2) X/Ka Backfits Installation (2)	-	-	71.115	-	-	1.970	-	-	1.685	-	-	0.000	-	-	0.000	-	-	0.000
6.3) ATIP SOVT	-	-	1.644	-	-	1.608	-	-	1.152	-	-	0.427	-	-	0.000	-	-	0.427
6.4) ATIP Installation (3)	-	-	36.154	-	-	6.256	-	-	2.988	-	-	2.547	-	-	0.000	-	-	2.547
Subtotal: Support - NS777 FMP Install (Afloat) Cost	**-**	**-**	***111.559***	**-**	**-**	***9.920***	**-**	**-**	***5.912***	**-**	**-**	***2.974***	**-**	**-**	***0.000***	**-**	**-**	***2.974***
Support - NS776 Install (Ashore) Cost																		
8.1) Ashore Antenna SOVT	-	-	0.000	-	-	0.428	-	-	0.349	-	-	0.178	-	-	0.000	-	-	0.178
8.2) Ashore Antennas Installation (4)	-	-	2.034	-	-	2.108	-	-	2.925	-	-	1.521	-	-	0.000	-	-	1.521
Subtotal: Support - NS776 Install (Ashore) Cost	**-**	**-**	***2.034***	**-**	**-**	***2.536***	**-**	**-**	***3.274***	**-**	**-**	***1.699***	**-**	**-**	***0.000***	**-**	**-**	***1.699***
Gross/Weapon System Cost	**-**	**-**	**232.466**	**-**	**-**	**12.456**	**-**	**-**	**9.186**	**-**	**-**	**4.673**	**-**	**-**	**0.000**	**-**	**-**	**4.673**

Footnotes:

(1) IA&T costs are budgeted in the year of the hardware delivery.

(2) 1. Fielded platforms with the Q/Ka configuration require an X/Ka backfit, which has additional costs dependent on platform (large vs small deck). NMT scheduled installations are dependent on limited ship availabilities as the program nears FOC in FY23.

(3) 1. ATIP modem installations will take place during a Window of Opportunity (WOO) availability that includes a 14-day window to perform and complete the installation. FY21 funds Qty 12 installs. 2.FY19 - FY22 ATIP installation cost and quantity adjustments reflect updated cost estimates based upon actuals to date for individual ATIP configuration types on ship, shore and sub platforms.

(4) Ashore Antenna installation schedule updates reflect re-prioritization to support NMT Afloat Installations that are dependent on limited ship availabilities as the program nears FOC in FY23. FY20 funded Qty 4 installs and FY21 funds Qty 1 install.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 1 / 3216 Navy Multiband Terminal (NMT) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	789.667	60.380	41.527	38.948	0.000	38.948	13.758	0.000	0.000	0.000	73.062	1,017.342
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	789.667	60.380	41.527	38.948	0.000	38.948	13.758	0.000	0.000	0.000	73.062	1,017.342
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**789.667**	**60.380**	**41.527**	**38.948**	**0.000**	**38.948**	**13.758**	**0.000**	**0.000**	**0.000**	**73.062**	**1,017.342**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

(Afloat Ship) (Afloat Sub): Provides jam resistant, low probability of interception and detection for protected extended data rate communications with Advanced Extremely High Frequency (AEHF) capability.

The FY21 request provides for the procurement of 2 NMT shipboard terminal and the installation of 5 NMT shipboard terminals to align with earliest remaining installation availabilities. Budget updates also include the breakout of Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) costs. IA&T efforts are performed once terminals and antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals and antennas required for NMT ship and submarine afloat platforms. SOVT efforts are performed by NIWC Atlantic, Charleston, SC and NIWC Pacific, San Diego, CA and validate the NMT system is operational post installation on afloat platforms.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 1 / 3216 Navy Multiband Terminal (NMT) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Ships, submarines	**Modification Type:** TBD	**Related RDT&E PEs:** 0303109N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat												
B Kits												
Recurring												
1.1.1) Afloat Ship - NonOrganic (5)	118 / 379.712	5 / 23.340	4 / 23.208	2 / 21.046	- / -	2 / 21.046	- / -	- / -	- / -	- / -	1 / 17.500	130 / 464.806
1.1.2) Afloat Sub - NonOrganic	69 / 64.094	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	69 / 64.094
Subtotal: Recurring	*- / 443.806*	*- / 23.340*	*- / 23.208*	*- / 21.046*	*- / -*	*- / 21.046*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 17.500*	*- / 528.900*
Subtotal: 3216 Navy Multiband Terminal (NMT) - Afloat	*187 / 443.806*	*5 / 23.340*	*4 / 23.208*	*2 / 21.046*	*- / -*	*2 / 21.046*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 17.500*	*199 / 528.900*
Subtotal: Procurement, All Modification Items	*- / 443.806*	*- / 23.340*	*- / 23.208*	*- / 21.046*	*- / -*	*- / 21.046*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 17.500*	*- / 528.900*
Support *(All Modification Items)*												
2.1) NMT Integration, Assembly & Test (IA&T)	- / 5.749	- / 0.125	- / 0.384	- / 0.469	- / 0.000	- / 0.469	- / 0.266	- / 0.000	- / 0.000	- / 0.000	- / -	- / 6.993
2.2) Production Support - Ship	- / 17.551	- / 1.400	- / 1.392	- / 1.226	- / 0.000	- / 1.226	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 21.569
2.3) Production Support - Sub	- / 3.978	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 3.978
2.4) Other DSA - Ship	- / 35.272	- / 2.724	- / 2.207	- / 1.584	- / 0.000	- / 1.584	- / 0.361	- / 0.000	- / 0.000	- / 0.000	- / -	- / 42.148
2.5) Other DSA - Sub	- / 7.598	- / 0.162	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 7.760
2.6) NMT System Operational Verification Test (SOVT)	- / 6.342	- / 1.198	- / 1.047	- / 1.068	- / 0.000	- / 1.068	- / 0.974	- / 0.000	- / 0.000	- / 0.000	- / -	- / 10.629
2.7) NMT Technical Refresh (6)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.862	- / 0.000	- / 0.000	- / 0.000	- / 52.062	- / 55.924
Subtotal: Support	*- / 76.490*	*- / 5.609*	*- / 5.030*	*- / 4.347*	*- / -*	*- / 4.347*	*- / 5.463*	*- / -*	*- / -*	*- / -*	*- / 52.062*	*- / 149.001*
Installation												
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat	- / 269.371	- / 31.431	- / 13.289	- / 13.555	- / 0.000	- / 13.555	- / 8.295	- / 0.000	- / 0.000	- / 0.000	- / 3.500	- / 339.441
Subtotal: Installation	*- / 269.371*	*- / 31.431*	*- / 13.289*	*- / 13.555*	*- / -*	*- / 13.555*	*- / 8.295*	*- / -*	*- / -*	*- / -*	*- / 3.500*	*- / 339.441*
Total												
Total Cost (Procurement + Support + Installation)	**789.667**	**60.380**	**41.527**	**38.948**	**0.000**	**38.948**	**13.758**	**0.000**	**0.000**	**0.000**	**73.062**	**1,017.342**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 1 / 3216 Navy Multiband Terminal (NMT) - Afloat

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat

Manufacturer Information

Manufacturer Name: Raytheon (7) | Manufacturer Location: Marlborough, MA

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 15

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Dec 2020				
Delivery Dates	Apr 2020	Apr 2021	Mar 2022				

Installation Information

Method of Implementation: Method:: Installation Name: Navy Multiband Terminal (NMT) - Afloat

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	173 / 269.371	12 / 31.431	- / -	1 / 2.711	0 / 0.000	1 / 2.711	1 / 2.765	- / -	- / -	- / -	0 / 0.000	187 / 306.278
FY 2019	- / -	- / -	5 / 13.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 13.289
FY 2020	- / -	- / -	- / -	4 / 10.844	0 / 0.000	4 / 10.844	- / -	- / -	- / -	- / -	0 / 0.000	4 / 10.844
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 5.530	- / -	- / -	- / -	0 / 0.000	2 / 5.530
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.500	1 / 3.500
Total	173 / 269.371	12 / 31.431	5 / 13.289	5 / 13.555	0 / 0.000	5 / 13.555	3 / 8.295	- / -	- / -	- / -	1 / 3.500	199 / 339.441

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	173	-	7	2	3	-	-	-	5	-	-	4	1	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	199
Out	166	7	-	7	2	3	-	-	-	5	-	-	4	1	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	1	199

Footnotes:

(5) 1. Procurement costs reflect current Raytheon contract pricing and vary depending on number of terminals procured and Economic Ordering Quantity (EOQ) savings. Procurement costs fluctuate for the various NMT system configurations by ship type which influences average unit cost. The perceived increase in procurement unit cost from FY20 to FY21 is due to loss of EOQ savings, as well as cost fluctuations for each variance based on ship configuration type. 2. Fielding plan updates are Fleet driven and are dependent on limited ship and submarine availabilities to meet Full Operational Capability

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 1 / 3216 Navy Multiband Terminal (NMT) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(FOC) in FY23. 3. Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) engineering services are required to deliver and install the NMT Terminal System. IA&T costs are budgeted in the year of the hardware delivery. Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12-month period with the last delivery occurring 27 months after award. For example, the last terminal delivery from the FY21 buy can deliver as late as September 2022. System Operational Verification Test (SOVT) costs are tied to the end of the installation availability. 4. Design Services Allocation (DSA) consists of installation design and post installation support. Installation design work consists of Ship Check and Installation Drawings that are integral in the planning of an installation and performed 6-12 months prior to installation start. Post Installation support includes Integrated Logistics Support (ILS) updates and Ship Selected Record (SSR) updates. DSA cost fluctuate from year to year based on the number of installations occurring. 5. Install cost fluctuations are driven by the configuration of the NMT system and the platform type. For example, estimated installation cost for a LHD 1 class (large deck) platform with dual Q/X/Ka capability is approximately three times greater than a DDG 51 class platform (small deck) with the same Q/X/Ka capability. Large deck ships consist of 2 Terminal Communication Groups with 4, 5, or 6 antennas. The antenna mix is dependent on the specific configuration requirement for each ship. For example, Small deck ships consist of 1 Terminal Communication Group with 2, 3, or 4 antennas. There are 13 variants of the NMT and antenna size varies by class (ranging from 54" to 96"). 6. FY20 Procurements reduced by Qty1 due to FY20 Congressional Mark for Afloat Ship Cost Growth ($-5.203M). 7. FY20 Installation cost reduced in FY20 due to Congressional Mark for Installation Cost Growth ($-2.104M)

(6) 1. Technical Refresh is an upgrade to the Operator Interface Unit (OIU) to address obsolescence issues as well as improve the NMT cyber security posture. Hardware improvements enable hosting of new more secure operating systems and allow for replacement of key components thus reducing maintenance and sparing costs as well as improve reliability.

(7) Contract expires on 12/29/2020

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 2 / 3216 Navy Multiband Terminal (NMT) - Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	116.016	9.654	15.356	1.950	0.000	1.950	10.842	0.000	0.000	0.000	0.000	153.818
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	116.016	9.654	15.356	1.950	0.000	1.950	10.842	0.000	0.000	0.000	0.000	153.818
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**116.016**	**9.654**	**15.356**	**1.950**	**0.000**	**1.950**	**10.842**	**0.000**	**0.000**	**0.000**	**0.000**	**153.818**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY21 request provides for the installation of 1 NMT shore terminals to align to remaining shore sites. Budget updates also include the breakout of Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) costs. IA&T efforts are performed once terminals and antennas are delivered from Raytheon Production Facilities to the government site NIWC Atlantic, Charleston SC. NIWC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals and antennas required for NMT shore platforms. SOVT efforts are performed by NIWC Atlantic, Charleston, SC and NIWC Pacific, San Diego, CA and validate the NMT system is operational post installation on ashore platforms.

[Ashore] Provides jam resistant, low probability of interception and detection for protected extended rate communications with Advanced Extremely High Frequency (AEHF) capability.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 2 / 3216 Navy Multiband Terminal (NMT) - Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore stations	**Modification Type:** TBD	**Related RDT&E PEs:** 0303109N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Ashore												
B Kits												
Recurring												
1.1.1) Ashore - NonOrganic [8]	33 / 69.181	2 / 5.249	5 / 12.670	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	40 / 87.100
Subtotal: Recurring	*- / 69.181*	*- / 5.249*	*- / 12.670*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 87.100*
Subtotal: 3216 Navy Multiband Terminal (NMT) - Ashore	*33 / 69.181*	*2 / 5.249*	*5 / 12.670*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*40 / 87.100*
Subtotal: Procurement, All Modification Items	*- / 69.181*	*- / 5.249*	*- / 12.670*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 87.100*
Support *(All Modification Items)*												
2.1) NMT Integration, Assembly & Test (IA&T)	- / 1.163	- / 0.125	- / 0.256	- / 0.392	- / -	- / 0.392	- / -	- / -	- / -	- / -	- / -	- / 1.936
2.2) Production Support - Ashore	- / 3.163	- / 0.315	- / 0.746	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.224
2.3) Other DSA - Ashore	- / 0.794	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.794
2.4) NMT System Operational Verification Test (SOVT)	- / 1.365	- / 0.172	- / 0.262	- / 0.089	- / -	- / 0.089	- / 0.454	- / -	- / -	- / -	- / -	- / 2.342
Subtotal: Support	*- / 6.485*	*- / 0.612*	*- / 1.264*	*- / 0.481*	*- / -*	*- / 0.481*	*- / 0.454*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 9.296*
Installation												
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Ashore	- / 40.350	- / 3.793	- / 1.422	- / 1.469	- / 0.000	- / 1.469	- / 10.388	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 57.422
Subtotal: Installation	*- / 40.350*	*- / 3.793*	*- / 1.422*	*- / 1.469*	*- / -*	*- / 1.469*	*- / 10.388*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 57.422*
Total												
Total Cost (Procurement + Support + Installation)	**116.016**	**9.654**	**15.356**	**1.950**	**0.000**	**1.950**	**10.842**	**0.000**	**0.000**	**0.000**	**0.000**	**153.818**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 2 / 3216 Navy Multiband Terminal (NMT) - Ashore

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Ashore

Manufacturer Information

Manufacturer Name: Raytheon | Manufacturer Location: Marlborough, MA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 15

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020					
Delivery Dates	Apr 2020	Apr 2021					

Installation Information

Method of Implementation: Method:: Installation Name: Navy Multiband Terminal (NMT) - Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	28 / 40.350	3 / 3.793	- / -	- / -	- / -	- / -	2 / 2.968	- / -	- / -	- / -	0 / 0.000	33 / 47.111
FY 2019	- / -	- / -	1 / 1.422	1 / 1.469	0 / 0.000	1 / 1.469	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.891
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	5 / 7.420	- / -	- / -	- / -	0 / 0.000	5 / 7.420
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	28 / 40.350	3 / 3.793	1 / 1.422	1 / 1.469	0 / 0.000	1 / 1.469	7 / 10.388	- / -	- / -	- / -	0 / 0.000	40 / 57.422

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	28	-	-	2	1	-	-	1	-	1	-	-	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Out	27	1	-	-	2	1	-	-	1	-	1	-	-	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	40

Footnotes:

(8) 1. Procurement costs reflect current Raytheon contract pricing and vary depending on number of terminals procured and Economic Ordering Quantity (EOQ) savings. 2. Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) engineering services are required to deliver and install the NMT System. IA&T costs are budgeted in the year of the hardware delivery. Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12-month period with the last delivery occurring 27 months after award. For example, the last FY21 terminal buy can deliver

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 2 / 3216 Navy Multiband Terminal (NMT) - Ashore
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

as late as March 2023. System Operational Verification Test (SOVT) costs are tied to the end of the shore installation availability. 3. FY20 Ashore Qty 1 reduced from FY 2020 President's Budget request due to FY 2020 Congressional Mark for Ashore kit previously funded ($-2.181M).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 3 / Assured C2 Modems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	11.514	26.495	10.646	18.981	0.000	18.981	0.000	0.000	0.000	0.000	0.000	67.636
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	11.514	26.495	10.646	18.981	0.000	18.981	0.000	0.000	0.000	0.000	0.000	67.636
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**11.514**	**26.495**	**10.646**	**18.981**	**0.000**	**18.981**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**67.636**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Assured C2 Modems: FY21 continues Modem tech refresh that directly supports Assured Command and Control (AC2) posture, SATCOM reliability, space resiliency via band diversity and redundancy for MILSATCOM.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 3 / Assured C2 Modems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore Stations, Ships	**Modification Type:** TBD	**Related RDT&E PEs:**

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Assured C2 Modems												
A Kits												
Recurring												
1.1.1) Assured C2 Modems - NonOrganic [9]	112 / 4.211	242 / 9.146	90 / 3.260	308 / 9.313	- / -	308 / 9.313	- / -	- / -	- / -	- / -	- / -	752 / 25.930
Subtotal: Recurring	*- / 4.211*	*- / 9.146*	*- / 3.260*	*- / 9.313*	*- / -*	*- / 9.313*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 25.930*
Subtotal: Assured C2 Modems	*112 / 4.211*	*242 / 9.146*	*90 / 3.260*	*308 / 9.313*	*- / -*	*308 / 9.313*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*752 / 25.930*
Subtotal: Procurement, All Modification Items	*- / 4.211*	*- / 9.146*	*- / 3.260*	*- / 9.313*	*- / -*	*- / 9.313*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 25.930*
Support *(All Modification Items)*												
2.1) Production Support - Assured C2 Modems	- / 0.253	- / 0.549	- / 0.196	- / 0.286	- / -	- / 0.286	- / -	- / -	- / -	- / -	- / -	- / 1.284
2.2) IA&T - Assured C2 Modems	- / 3.131	- / 6.901	- / 2.618	- / 1.127	- / -	- / 1.127	- / -	- / -	- / -	- / -	- / -	- / 13.777
2.3) SOVT - Assured C2 Modems	- / 0.537	- / 1.711	- / 1.466	- / 1.246	- / -	- / 1.246	- / -	- / -	- / -	- / -	- / -	- / 4.960
Subtotal: Support	*- / 3.921*	*- / 9.161*	*- / 4.280*	*- / 2.659*	*- / -*	*- / 2.659*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 20.021*
Installation												
Modification Item 1 of 1: Assured C2 Modems	- / 3.382	- / 8.188	- / 3.106	- / 7.009	- / 0.000	- / 7.009	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 21.685
Subtotal: Installation	*- / 3.382*	*- / 8.188*	*- / 3.106*	*- / 7.009*	*- / -*	*- / 7.009*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 21.685*
Total												
Total Cost (Procurement + Support + Installation)	**11.514**	**26.495**	**10.646**	**18.981**	**0.000**	**18.981**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**67.636**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 3 / Assured C2 Modems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: Assured C2 Modems

Manufacturer Information

Manufacturer Name: COMTECH	Manufacturer Location: Tempe, AZ
Administrative Leadtime *(in Months)*: 1	Production Leadtime *(in Months)*: 3

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Nov 2018	Nov 2019					
Delivery Dates	Feb 2019	Feb 2020					

Installation Information

Method of Implementation: [none specified]:: Installation Name: Assured C2 Modems

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	112 / 3.382	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	112 / 3.382
FY 2019	- / -	242 / 8.188	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	242 / 8.188
FY 2020	- / -	- / -	90 / 3.106	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	90 / 3.106
FY 2021	- / -	- / -	- / -	308 / 7.009	0 / 0.000	308 / 7.009	- / -	- / -	- / -	- / -	0 / 0.000	308 / 7.009
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	112 / 3.382	242 / 8.188	90 / 3.106	308 / 7.009	0 / 0.000	308 / 7.009	- / -	- / -	- / -	- / -	0 / 0.000	752 / 21.685

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	112	-	18	105	119	-	16	36	38	-	114	116	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	752
Out	112	-	18	105	119	-	16	36	38	-	114	116	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	752

Footnotes:

(9) 1. The AC2 modems will be fielded at 7 DISA shore teleport sites and on 276 ship platforms. Up to Qty 68 modems are required for each DISA shore site for a total of 476 shore modems. 2. FY21 funds the procurement and installation of AC2 modems on Qty 168 ships and Qty 140 modems on shore sites. 3. FY19-FY21 DSA costs were included in previous budget submissions but have since been removed as the AC2 modem installation will be performed as an Engineering Change and do not require a 75%/25% DSA planning structure. 5. Ship Modem installations will take place during a Window of Opportunity (WOO) availability that includes a 8 day window to perform and complete the installation. 6. AC2 Modem installation cost varies from year to year based upon the apportionment of ship and shore

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	**P-1 Line Item Number / Title:** 3216 / Navy Multiband Terminal (NMT)	**Modification Number / Title:** 3 / Assured C2 Modems
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

site installations. The program installs quantity 48-60 modems during one shore site installation driving down the per modem installation cost when there is a higher number of Shore installs. 7. AC2 Modem Installation cost reduced in FY20 due to FY20 Congressional Mark for Assured C2 Modem Installation Cost Growth.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 14: Shore Communications	**P-1 Line Item Number / Title:** 3302 / Joint Communications Support Element (JCSE)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	28.393	4.292	4.293	4.398	0.000	4.398	4.763	4.569	4.631	4.722	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	28.393	4.292	4.293	4.398	0.000	4.398	4.763	4.569	4.631	4.722	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**28.393**	**4.292**	**4.293**	**4.398**	**0.000**	**4.398**	**4.763**	**4.569**	**4.631**	**4.722**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Joint Communications Support Element (JCSE) Program is responsible for procuring hardware and software to support Defensive Cyber Operations, Transport technologies (narrowband, wideband and protected satellite communications), Command, Control, Communications, and Computers (C4) Architecture (network elements that provide access to the Defense Information Systems Network (DISN) cloud), and Command and Control (C2) On-The-Move (land, air and ground based tactical capabilities) in concert with Strategic Planning Guidance (SPG). JCSE's Modernization Program is structured around Combatant Command (CCMD) requirements using emerging technologies. Services formally influence JCSE's acquisition plan through semi-annual program reviews and make recommendations in concert with Major Defense Acquisition Program (MDAP) schedules, ensuring that Service dollars meet Joint Service requirements. The modernization program goals include meeting emerging real-world operational requirements with improved capabilities, smaller footprint, reduced operations and maintenance costs, and seamless integration with the global information grid.

This line funds the Department of the Navy's one third (1/3) portion of the total JCSE Program. This program is jointly funded by Army, Navy and Air Force in support of Joint Tactical Force and Joint Special Operations Task Force Headquarters.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 14: Shore Communications	**P-1 Line Item Number / Title:** 3302 / Joint Communications Support Element (JCSE)

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Joint Communications Support Element				- / 28.393	- / 4.292	- / 4.293	- / 4.398	- / -	- / 4.398
P-40	**Total Gross/Weapon System Cost**				**- / 28.393**	**- / 4.292**	**- / 4.293**	**- / 4.398**	**- / 0.000**	**- / 4.398**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
JCSE: FY21 funding procures communications equipment based on Strategic Planning Guidance (SPG). This includes the maximum capabilities for narrowband, wideband and protected satellite communications (SATCOM) terminals and systems, tactical radios, terrestrial communications systems, satellite hubs, networking elements, virtual appliances, Video Teleconferencing (VTC) capabilities, alternative power solutions, airborne /in-route, forced entry, cyber security, and mobile joint Command and Control (C2) equipment. JCSE's Modernization Program's objective is to meet emerging real-world operational and cyber defense requirements with maximum capabilities, utilizing the smallest possible footprint, while performing a seamless integration with the global information grid. This equipment is a critical part of Command, Control and Communications packages that provide direct operational support to joint forces and headquarter elements deployed to austere locations around the globe. JCSE's program is built/restructured based on Combatant Command(CCMD) and Service Components' requirements and emerging technologies. The Services influence JCSE's spending plan through recommendations in concert with Major Defense Acquisition Program (MDAP) schedules, ensuring that Service dollars meet Joint Service requirements. Per Defense Planning Guidance (DPG) and Director, Joint Staff Memorandum (DJSM) 0291-14, the Navy is mandated to fund one third (1/3) fair share of JCSE's validated Modernization Program.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 14	**P-1 Line Item Number / Title:** 3302 / Joint Communications Support Element (JCSE)	**Aggregated Items Title:** Joint Communications Support Element

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
1) Joint Communications Support Element Modernization																				
1.1) Joint Communications Support Element Modernization [1]	A		-	-	28.393	-	-	4.292	-	-	4.293	-	-	4.398	-	-	-	-	-	4.398
Subtotal: 1) Joint Communications Support Element Modernization			**-**	**-**	***28.393***	**-**	**-**	***4.292***	**-**	**-**	***4.293***	**-**	**-**	***4.398***	**-**	**-**	**-**	**-**	**-**	***4.398***
Total			**-**	**-**	**28.393**	**-**	**-**	**4.292**	**-**	**-**	**4.293**	**-**	**-**	**4.398**	**-**	**-**	**-**	**-**	**-**	**4.398**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

[1] Quantities are not shown. Quantities and equipment type are determined by the Combatant Command (COCOM) on an annual basis based on Joint Task Force and Joint Special Operations Task Force operational requirements for critical communications.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303140N, 0305327N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,724.061	150.099	166.540	157.551	0.000	157.551	155.801	163.645	165.820	165.329	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,724.061	150.099	166.540	157.551	0.000	157.551	155.801	163.645	165.820	165.329	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,724.061**	**150.099**	**166.540**	**157.551**	**0.000**	**157.551**	**155.801**	**163.645**	**165.820**	**165.329**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.968	-	-	-	-	1.002	-	0.740	0.305	Continuing	Continuing
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Information Systems Security Program (ISSP) ensures the protection of Navy and joint cyberspace systems from exploitation and attack. Systems include wired and wireless telecommunications systems, cybersecurity systems, and the content processed, stored, or transmitted therein. ISSP includes protection of the Navy's National Security Systems (NSS).

The rapid change in the underlying commercial and government cyber infrastructures makes cybersecurity an increasingly complex and dynamic problem. ISSP provides the Navy's warfighter the essential information trust characteristics of availability, confidentiality, integrity, authentication, and non-repudiation. Cybersecurity capabilities must evolve quickly to meet the rapidly evolving threats and vulnerabilities.

Programs within the ISSP budget include:

Public Key Infrastructure (PKI): PKI implements a secure infrastructure for the generation, management, and delivery of digital certificates for secure electronic transactions, hardware certificate-based two-way authentication to networks, applications, web servers, and secure email. PKI equipment includes: Navy Certificate Validation Infrastructure (NCVI) Secret Internet Protocol Router Network (SIPRNet) & Non-Classified Internet Protocol Router Network (NIPRNet) hardware/software, and hardware token product end items.

Navy Cyber Situational Awareness (NCSA): NCSA is a command and control infrastructure that provides Navy commanders with timely, trusted, and comprehensive Situational Awareness (SA) of the cyberspace domain to include tailored, near real-time visualization of network health, vulnerabilities, and operational readiness through the correlation of data from multiple sources. NCSA enables early threat detection and timely decision making. NCSA ashore systems will enable Navy commanders to monitor, assess, plan, and direct Navy networks to provide a high-level of confidence that operational missions can be executed as planned in adverse cyber conditions. Cyber SA will be provided via web-accessible services generated from a primary core suite fielded at Navy Cyber Defense Operations Command (NCDOC). Visualizations and analytics will be customized based on end user needs, shareable and tailorable between different end users. End users include Fleet Cyber Command/Commander Tenth Fleet (FCC/C10F), Fleet Maritime Operations Centers (MOCs), NCDOC, and Navy Network Warfare Command (NNWC). NCSA procures equipment to collect, curate, analyze, and visualize maritime operations critical for providing Navy commanders with timely, trusted, and comprehensive SA of the cyberspace domain; Data as a Service (DaaS) which provides the ability to ingest disparate data from numerous data sources; analytics suite of software and logic to integrate and translate the data ingested by the DaaS component; visualization/user interface to display cyber SA data that are relevant to the unique needs of the Cyber Commander and for display via common visual services; as well as equipment for platforms conducting Navy missions. The data that is collected and analyzed via SHARKCAGE will be presented and visualized via the NCSA capability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0303140N, 0305327N
Line Item MDAP/MAIS Code: N/A		

Counter Insider Threat Capability (CITC): Executive Order 13587 and the National Insider Threat Policy mandate all United States Government departments and agencies to implement insider threat programs that monitor user activity on all classified networks and provide an insider threat analytical and response capability. CITC is the Department of the Navy's (DoN) implementation of this requirement. CITC's mission is to deter, detect, and respond to the threat from witting and unwitting insiders. The Personnel Risk Indicator Detection Enterprise (PRIDE) is the materiel solution required to support the CITC mission, and it will consist of two parts: (1) User Activity Monitoring (UAM), which will monitor user activity on Navy networks, and (2) an Integrated Tool Suite (ITS), which will provide the Information Technology platform for the analytic and response capabilities. The PRIDE system will provide the technology required by the DoN Insider Threat Hub to comply with the National mandates and to protect Navy data, equipment, and personnel from insider threats. The UAM and ITS procurements will require a phased approach to meet full operating capability, this consists of procuring additional inital licenses each year to expand coverage to additional endpoints on Joint Worldwide Intelligence Communications System (JWICS) and Secret Internet Protocol Router Networks (SIPRnet).

Computer Network Defense (CND): The CND afloat capability will remain until all systems have transitioned to Consolidated Afloat Networks and Enterprise Services (CANES). CND afloat Operating System Environment (OSE) includes host-based protection tools, system vulnerability tools, cyber remediation tools, supporting hardware and software for Department of Defense (DoD) mandated tools, enhanced data correlation tools, switches, ancillary devices and other related security tools. CND ashore provides capabilities to secure the Cyber Domain. CND is a set of processes and protective measures that use computer networks to detect, monitor, protect, analyze, and defend against network infiltrations resulting in service/network denial, degradation and disruptions. CND enables a government or military institute/ organization to defend against network attacks perpetrated by malicious or adversarial computer systems or networks. The Fixed Submarine Broadcast System (FSBS) includes the Nuclear Command, Control, and Communications, Navy (NC3-N) requirement (details held at a higher classification).

Navy Cryptography (Crypto): Navy Crypto modernizes legacy cryptographic equipment which includes families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories in order to meet mandated National Security Agency (NSA) cease key dates for modernized encryption. Advanced Cryptographic Capabilities (ACC), will provide NSA mandated cryptographic security software modernization of various communications security devices by cease key dates (details held at a higher classification). Cryptographic Modernization 2 (CM2) provides NSA mandated cryptographic modernization of various communications security devices (details held at a higher classification).

Key Management (KM): KM is a collection of Tier 2 security equipment, Key Management Infrastructure (KMI), and Tier 3 equipment Simple Key Loader (SKL). KMI will be a single, automated, network-accessible, electronic-based KM and predominantly electronic cryptographic product delivery infrastructure. It will provide Net Centric, reliable, timely, and secure COMSEC material management, and distribution. Additionally, it will provide the means for secure ordering, generation, production, distribution, management and auditing of cryptographic products. The NSA mandates a tech refresh for the KMI system every five years.

SHARKCAGE: SHARKCAGE is a global, federated Defensive Cyberspace Operations (DCO) enclave consisting of shore sensor nodes, DCO analysis workbenches, and analytic nodes. Utilizing one-way passive taps in a protected, isolated, classified environment, SHARKCAGE consolidates cyber event data from multiple platforms and networks, providing Navy DCO forces with a shared environment and common platform for integrated workflow, collaboration, and analysis. SHARKCAGE efficiently detects, correlates, and analyzes nation and non-nation state attacks against maritime data and the Naval Networking Environment (NNE). The data that is collected and analyzed via SHARKCAGE will be presented and visualized via the NCSA capability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303140N, 0305327N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Info Systems Security Program (ISSP)	P-5a			- / 1,148.773	- / 5.728	- / 8.038	- / 5.118	- / 0.000	- / 5.118
P-3a	1 / Computer Network Defense (CND) Increment 2- Ashore (DA070) (Various)				- / 190.239	- / 27.934	- / 26.792	- / 27.958	- / 0.000	- / 27.958
P-3a	2 / Navy Cryptography (Crypto) - Afloat (DA071) (Various)				- / 210.217	- / 40.031	- / 35.281	- / 34.742	- / 0.000	- / 34.742
P-3a	3 / Navy Cryptography (Crypto) - Ashore (DA071) (Initial)				- / 56.421	- / 38.353	- / 34.728	- / 29.128	- / 0.000	- / 29.128
P-3a	4 / Key Management (KM) - Afloat (DA005) (Various)				- / 66.142	- / 5.073	- / 5.648	- / 7.022	- / 0.000	- / 7.022
P-3a	5 / Key Management (KM) - Ashore (DA005) (Various)				- / 40.050	- / 6.212	- / 6.025	- / 4.742	- / 0.000	- / 4.742
P-3a	6 / SHARKCAGE - Afloat (DA070) (Initial)				- / 3.083	- / 11.610	- / 38.841	- / 33.725	- / 0.000	- / 33.725
P-3a	7 / SHARKCAGE - Ashore (DA070) (Various)				- / 9.136	- / 15.158	- / 11.187	- / 15.116	- / 0.000	- / 15.116
P-40	**Total Gross/Weapon System Cost**				**- / 1,724.061**	**- / 150.099**	**- / 166.540**	**- / 157.551**	**- / 0.000**	**- / 157.551**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Info Systems Security Program (ISSP)	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Computer Network Defense (CND) Increment 2- Ashore (DA070) (Various)				- / 28.698	- / 29.471	- / 30.193	- / 30.831	Continuing	Continuing
P-3a	2 / Navy Cryptography (Crypto) - Afloat (DA071) (Various)				- / 36.650	- / 37.923	- / 30.796	- / 39.040	Continuing	Continuing
P-3a	3 / Navy Cryptography (Crypto) - Ashore (DA071) (Initial)				- / 32.891	- / 33.504	- / 41.067	- / 33.508	Continuing	Continuing
P-3a	4 / Key Management (KM) - Afloat (DA005) (Various)				- / 8.211	- / 6.828	- / 6.431	- / 5.977	Continuing	Continuing
P-3a	5 / Key Management (KM) - Ashore (DA005) (Various)				- / 3.787	- / 5.425	- / 6.067	- / 6.769	Continuing	Continuing
P-3a	6 / SHARKCAGE - Afloat (DA070) (Initial)				- / 35.699	- / 36.413	- / 31.037	- / 32.669	Continuing	Continuing
P-3a	7 / SHARKCAGE - Ashore (DA070) (Various)				- / 4.805	- / 9.069	- / 15.237	- / 11.530	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 155.801**	**- / 163.645**	**- / 165.820**	**- / 165.329**	**Continuing**	**Continuing**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY 2021 budget decrease of $8.989M is driven by Counter Insider Threat Capability (CITC), realigning OPN to OMN AGSAG 1CCY, to be in line with changes in fielding strategy requiring a software-only solution hosted by cloud-based service model rather than hardware procurement and the reduced procurement of (7) SHARKCAGE Afloat Suites which aligns to the current fielding requirements.

In addition, the FY 2021 budget will procure the following:

P40a / Key Management (KM) - Ashore (DA005): (171) Simple Key Loaders (SKL), (53) Key Management Infrastructure (KMI) Tech Refresh; FY 2021 $1.283M decrease is due to a reduction in Key Management Infrastructure (KMI) Tech Refresh installations from the prior year which align to site availability.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0303140N, 0305327N
Line Item MDAP/MAIS Code: N/A		

P5 / Public Key Infrastructure (PKI) (DA018): (10) PKI systems; FY 2021 $.030M increase is due to Design Services Allocation (DSA) costs attributed to requirements of specific platforms.

P5 / Navy Cyber Situational Awareness (NCSA) (DA070): (1) NCSA Suite; FY 2021 $.027M increase is due to installation and DSA costs attributed to requirements of specific sites.

P5 / Computer Network Defense (CND) (DA070): (16) CND afloat systems; FY2021 $.358M decrease is due to reduction in CND afloat quantities as all systems transition to Consolidated Afloat Networks and Enterprise Services (CANES).

P3a / Computer Network Defense (CND) - Ashore (DA070): Various equipment to secure Navy Ashore networks, i.e., hardware and software such as host-based protection tools, Department of Defense (DoD) mandated cyber security tools, cyber security capabilities, servers, laptops, ancillary devices and CND Deployer Toolkits (CDTs). FY 2021 $1.166M increase primarily driven by additional Fixed Submarine Broadcast System (FSBS) sites which align to current site requirements.

P3a / Navy Cryptography (Crypto) - Afloat (DA071): (73) VINSON/Advanced Narrowband Digital Voice Terminal Cryptographic Modernization (VACM) ship sets (NonOrganic), (142) In-Line Network Encryptors (INE) (Organic), (2) Advanced Cryptographic Capabilities (Organic), (478) KGV-11M Transmission Security (TRANSEC) (Organic); FY 2021 $5.500M decrease is primarily driven by ACC due to change in requirement that reduces the number of required devices to meet the National Security Agency (NSA) mandated cryptographic security software modernization of various communications security devices.

P3a / Navy Cryptography (Crypto) - Ashore (DA071): (1,146) VACM devices (Organic), (3) ACC (Organic), (27) VACM ashore sets (NonOrganic); FY 2021 $3.000M decrease is primarily driven by ACC due to change in requirement that reduces the number of required devices to support ACC to meet the NSA mandated cryptographic security software modernization of various communications security devices.

P3a / Key Management (KM) - Afloat (DA005): (237) SKL, (42) KMI Tech Refresh; FY 2021 $1.374M increase in KMI Tech Refresh procurement and installation aligns to NSA mandated five-year refresh cycle.

P3a / SHARKCAGE - Afloat (DA070): (46) SHARKCAGE Afloat Suites; FY 2021 $5.116M decrease is driven by the reduced procurement of (7) SHARKCAGE Afloat Suites which aligns to the current fielding requirements.

P3a / SHARKCAGE - Ashore (DA070): (2) Analytic Suites, (5) Sensor Suites; FY 2021 $3.929M increase is driven by the procurement of (1) additional SHARKCAGE Analytic Suite which aligns to current site requirements.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Item Number / Title [DODIC]:** 1 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,148.773	5.728	8.038	5.118	0.000	5.118
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,148.773	5.728	8.038	5.118	0.000	5.118
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,148.773**	**5.728**	**8.038**	**5.118**	**0.000**	**5.118**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - Consolidated Prior Year Requirements Cost																		
Non Recurring Cost																		
1.1.1) Consolidated Prior Year Requirements (1)	-	-	1,056.014	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	*1,056.014*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - Consolidated Prior Year Requirements Cost	**-**	**-**	***1,056.014***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - Public Key Infrastructure (PKI) (DA018) Cost																		
Recurring Cost																		
2.1.1) PKI - Procurement(†)	0.766	45,326	34.714	88.500	10	0.885	88.500	10	0.885	88.500	10	0.885	-	-	0.000	88.500	10	0.885
Subtotal: Recurring Cost	-	-	*34.714*	-	-	*0.885*	-	-	*0.885*	-	-	*0.885*	-	-	*0.000*	-	-	*0.885*
Subtotal: Hardware - Public Key Infrastructure (PKI) (DA018) Cost	**-**	**-**	***34.714***	**-**	**-**	***0.885***	**-**	**-**	***0.885***	**-**	**-**	***0.885***	**-**	**-**	***0.000***	**-**	**-**	***0.885***
Hardware - Navy Cyber Situational Awareness (NCSA) (DA070) Cost																		
Recurring Cost																		
3.1.1) NCSA - Procurement(†)	900.000	2	1.800	900.000	1	0.900	1,000.000	1	1.000	1,000.000	1	1.000	-	-	0.000	1,000.000	1	1.000
Subtotal: Recurring Cost	-	-	*1.800*	-	-	*0.900*	-	-	*1.000*	-	-	*1.000*	-	-	*0.000*	-	-	*1.000*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - Navy Cyber Situational Awareness (NCSA) (DA070) Cost	**-**	**-**	***1.800***	**-**	**-**	***0.900***	**-**	**-**	***1.000***	**-**	**-**	***1.000***	**-**	**-**	***0.000***	**-**	**-**	***1.000***
Hardware - Computer Network Defense (CND) Afloat Procurement Cost																		
Recurring Cost																		
4.1.1) CND - Afloat Procurement(†) (2)	35.303	264	9.320	36.545	22	0.804	36.000	19	0.684	36.500	16	0.584	-	-	0.000	36.500	16	0.584
Subtotal: Recurring Cost	-	-	*9.320*	-	-	*0.804*	-	-	*0.684*	-	-	*0.584*	-	-	*0.000*	-	-	*0.584*
Subtotal: Hardware - Computer Network Defense (CND) Afloat Procurement Cost	**-**	**-**	***9.320***	**-**	**-**	***0.804***	**-**	**-**	***0.684***	**-**	**-**	***0.584***	**-**	**-**	***0.000***	**-**	**-**	***0.584***
Hardware - Counter Insider Threat Capability (CITC) - Procurement Cost																		
Recurring Cost																		
5.1.1) CITC - Ashore Procurement(†)	-	-	0.000	-	-	0.000	400.000	1	0.400	-	-	0.000	-	-	0.000	-	-	0.000
5.1.2) CITC - User Activity Monitoring (UAM) Procurement(†) (3)	-	-	0.000	-	-	0.000	0.090	7,000	0.630	-	-	0.000	-	-	0.000	-	-	0.000
5.1.3) CITC - Integrated Tool Suite (ITS) Procurement(†) (4)	-	-	0.000	-	-	0.000	0.110	7,000	0.770	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*1.800*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - Counter Insider Threat Capability (CITC) - Procurement Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***1.800***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Hardware - Public Key Infrastructure (PKI) Installations Cost																		
Recurring Cost																		
6.1.1) PKI - Installations	-	-	10.192	-	-	0.300	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Recurring Cost	-	-	*10.192*	-	-	*0.300*	-	-	*0.300*	-	-	*0.300*	-	-	*0.000*	-	-	*0.300*
Subtotal: Hardware - Public Key Infrastructure (PKI) Installations Cost	**-**	**-**	***10.192***	**-**	**-**	***0.300***	**-**	**-**	***0.300***	**-**	**-**	***0.300***	**-**	**-**	***0.000***	**-**	**-**	***0.300***
Hardware - Navy Cyber Situational Awareness (NCSA) Installations Cost																		
Recurring Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
7.1.1) NCSA - Installations	-	-	0.568	-	-	0.284	-	-	0.327	-	-	0.331	-	-	0.000	-	-	0.331
Subtotal: Recurring Cost	-	-	*0.568*	-	-	*0.284*	-	-	*0.327*	-	-	*0.331*	-	-	*0.000*	-	-	*0.331*
Subtotal: Hardware - Navy Cyber Situational Awareness (NCSA) Installations Cost	**-**	**-**	***0.568***	**-**	**-**	***0.284***	**-**	**-**	***0.327***	**-**	**-**	***0.331***	**-**	**-**	***0.000***	**-**	**-**	***0.331***
Hardware - Computer Network Defense (CND) Afloat Installations Cost																		
Recurring Cost																		
8.1.1) CND - Afloat Installations	-	-	18.061	-	-	1.546	-	-	1.349	-	-	1.106	-	-	0.000	-	-	1.106
Subtotal: Recurring Cost	-	-	*18.061*	-	-	*1.546*	-	-	*1.349*	-	-	*1.106*	-	-	*0.000*	-	-	*1.106*
Subtotal: Hardware - Computer Network Defense (CND) Afloat Installations Cost	**-**	**-**	***18.061***	**-**	**-**	***1.546***	**-**	**-**	***1.349***	**-**	**-**	***1.106***	**-**	**-**	***0.000***	**-**	**-**	***1.106***
Hardware - Counter Insider Threat Capability (CITC) Installations Cost																		
Recurring Cost																		
9.1.1) CITC - Ashore Installation (5)	-	-	0.000	-	-	0.000	-	-	0.250	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*0.250*	-	-	*0.000*	-	-	*0.000*	-	-	*0.000*
Subtotal: Hardware - Counter Insider Threat Capability (CITC) Installations Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.250***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Support - Public Key Infrastructure (PKI) Cost																		
10.1) PKI - Production Support	-	-	5.871	-	-	0.023	-	-	0.023	-	-	0.023	-	-	0.000	-	-	0.023
10.2) PKI - Design Services Allocations (DSA)	-	-	5.142	-	-	0.218	-	-	0.247	-	-	0.277	-	-	0.000	-	-	0.277
Subtotal: Support - Public Key Infrastructure (PKI) Cost	**-**	**-**	***11.013***	**-**	**-**	***0.241***	**-**	**-**	***0.270***	**-**	**-**	***0.300***	**-**	**-**	***0.000***	**-**	**-**	***0.300***
Support - Navy Cyber Situational Awareness (NCSA) Cost																		
11.1) NCSA - Production Support	-	-	0.087	-	-	0.048	-	-	0.070	-	-	0.070	-	-	0.000	-	-	0.070
11.2) NCSA - DSA	-	-	0.175	-	-	0.088	-	-	0.113	-	-	0.136	-	-	0.000	-	-	0.136
Subtotal: Support - Navy Cyber Situational Awareness (NCSA) Cost	**-**	**-**	***0.262***	**-**	**-**	***0.136***	**-**	**-**	***0.183***	**-**	**-**	***0.206***	**-**	**-**	***0.000***	**-**	**-**	***0.206***
Support - Computer Network Defense (CND) Afloat Cost																		

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
12.1) CND - Train-the-Trainer (6)	-	-	4.827	-	-	0.519	-	-	0.335	-	-	0.325	-	-	0.000	-	-	0.325
12.2) CND - Production Support	-	-	0.670	-	-	0.063	-	-	0.036	-	-	0.031	-	-	0.000	-	-	0.031
12.3) CND - DSA	-	-	1.332	-	-	0.050	-	-	0.050	-	-	0.050	-	-	0.000	-	-	0.050
Subtotal: Support - Computer Network Defense (CND) Afloat Cost	**-**	**-**	***6.829***	**-**	**-**	***0.632***	**-**	**-**	***0.421***	**-**	**-**	***0.406***	**-**	**-**	***0.000***	**-**	**-**	***0.406***
Support - Counter Insider Threat Capability (CITC) Cost																		
13.1) CITC - Production Support	-	-	0.000	-	-	0.000	-	-	0.259	-	-	0.000	-	-	0.000	-	-	0.000
13.2) CITC - Initial Training	-	-	0.000	-	-	0.000	-	-	0.200	-	-	0.000	-	-	0.000	-	-	0.000
13.3) CITC - DSA	-	-	0.000	-	-	0.000	-	-	0.110	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Counter Insider Threat Capability (CITC) Cost	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.569***	**-**	**-**	***0.000***	**-**	**-**	***0.000***	**-**	**-**	***0.000***
Gross/Weapon System Cost	**-**	**-**	**1,148.773**	**-**	**-**	**5.728**	**-**	**-**	**8.038**	**-**	**-**	**5.118**	**-**	**-**	**0.000**	**-**	**-**	**5.118**

Remarks:

[Hardware] Counter Insider Threat Capability (CITC) Procurement: The CITC program was transferred from the National Intelligence Activity in FY19; Funding transferred from LI 8106/Command Support Equipment in FY 2020. Prior budget exhibits allocated CITC costs across afloat units and ashore sites as a basis for unit cost. However, changes in CITC architecture have eliminated the need for physical installations at individual sites, except for a single central hub identified as the "CITC Ashore Procurement." The User Activity Monitoring (UAM) and Integrated Tool Suites (ITS) procurements will be fielded in line with Navy networks. Current budget reflects UAM and ITS procurements on network endpoints (workstations and servers) as single unit. Measuring by endpoints for procurements, more accurately represents a "unit cost". The UAM and ITS procurements will require a phased approach to meet full operating capability, this consists of procuring additional licenses each year to expand coverage to additional endpoints on Joint Worldwide Intelligence Communications System (JWICS) and Secret Internet Protocol Router Networks (SIPRnet). The UAM and ITS procurements will require a phased approach to meet full operating capability, this consists of procuring additional initial licenses each year to expand coverage to additional endpoints on JWICS and SIPRnet.

(†) indicates the presence of a P-5a

Footnotes:

(1) 1.1.1) Consolidated Prior Year Requirements: Funding consolidated into one line and include the following programs: Computer Network Defense (CND) Increment 1, Navy Cryptography (Crypto), Key Management (KM) and Cyber Virtual System Enclave (VSE).

(2) 4.1.1) CND - Afloat Procurement: FY 2021 quantities decrease as Consolidated Afloat Networks and Enterprise Services (CANES) is implemented. The CND shipboard infrastructure will move ashore in order to protect Navy afloat and ashore networks from cyber threats. The Operating System Environment (OSE) software is centrally managed and loads software onto hardware. Quantities reflect one system per ship platform.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Item Number / Title [DODIC]:** 1 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(3) 5.1.2) CITC - User Activity Monitoring (UAM) Procurement: FY 2021 decrease driven by the Counter Insider Threat Capability (CITC), realigning OPN to OMN AGSAG 1CCY, to be in line with changes in fielding strategy requiring a software-only solution hosted by cloud-based service model rather than hardware procurement.

(4) 5.1.3) CITC - Integrated Tool Suite (ITS) Procurement: FY 2021 decrease driven by the Counter Insider Threat Capability (CITC), realigning OPN to OMN AGSAG 1CCY, to be in line with changes in fielding strategy requiring a software-only solution hosted by cloud-based service model rather than hardware procurement.

(5) 9.1.1) CITC - Ashore Installation: FY21 decrease driven by the Counter Insider Threat Capability (CITC), realigning OPN to OMN AGSAG 1CCY, to be in line with changes in fielding strategy requiring a software-only solution hosted by cloud-based service model rather than hardware procurement.

(6) 12.1) CND - Train-the-Trainer: CND is designated Training Support Agent (TSA) and is required to transition initial training (train the trainer) to an approved solution at the schoolhouses.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Item Number / Title [DODIC]:** 1 / Info Systems Security Program (ISSP)

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ K)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) PKI - Procurement		2019	Defense Manpower Data Center / Alexandria, VA	WR	Alexandria, VA	Feb 2019	Mar 2019	10	88.500	Y		
2.1.1) PKI - Procurement		2020	Defense Manpower Data Center / Alexandria, VA	WR	Alexandria, VA	Feb 2020	Mar 2020	10	88.500	Y		
2.1.1) PKI - Procurement		2021	Defense Manpower Data Center / Alexandria, VA	WR	Alexandria, VA	Feb 2021	Mar 2021	10	88.500	Y		
3.1.1) NCSA - Procurement		2019	Naval Information Warfare Center (NIWC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2018	Mar 2019	1	900.000	Y		
3.1.1) NCSA - Procurement		2020	Naval Information Warfare Center (NIWC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2019	Mar 2020	1	1,000.000	Y		
3.1.1) NCSA - Procurement		2021	Naval Information Warfare Center (NIWC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2020	Mar 2021	1	1,000.000	Y		
4.1.1) CND - Afloat Procurement		2019	Naval Information Warfare Center (NIWC) Atlantic / Charleston, SC	WR	San Diego, CA	Dec 2018	Jan 2019	22	36.545	Y		
4.1.1) CND - Afloat Procurement		2020	Naval Information Warfare Center (NIWC) Atlantic / Charleston, SC	WR	San Diego, CA	Dec 2019	Jan 2020	19	36.000	Y		
4.1.1) CND - Afloat Procurement		2021	Naval Information Warfare Center (NIWC) Atlantic / Charleston, SC	WR	San Diego, CA	Dec 2020	Jan 2021	16	36.500	Y		
5.1.1) CITC - Ashore Procurement		2020 (7)	Classified / Classified	C / FFP	San Diego, CA	Dec 2019	Jan 2020	1	400.000	Y		
5.1.2) CITC - User Activity Monitoring (UAM) Procurement		2020 (8)	Classified / Classified	SS / IDIQ	San Diego, CA	Dec 2019	Jan 2020	7,000	0.090	Y		
5.1.3) CITC - Integrated Tool Suite (ITS) Procurement		2020 (9)	Classified / Classified	C / FFP	San Diego, CA	Dec 2019	Jan 2020	7,000	0.110	Y		

Footnotes:

(7) 5.1.1) CITC - Ashore Procurement: Vendor Classified

(8) 5.1.2) CITC - User Activity Monitoring (UAM) Procurement: Vendor Classified

(9) 5.1.3) CITC - Integrated Tool Suite (ITS) Procurement: Vendor Classified

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 1 / Computer Network Defense (CND) Increment 2- Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	190.239	27.934	26.792	27.958	0.000	27.958	28.698	29.471	30.193	30.831	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	190.239	27.934	26.792	27.958	0.000	27.958	28.698	29.471	30.193	30.831	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**190.239**	**27.934**	**26.792**	**27.958**	**0.000**	**27.958**	**28.698**	**29.471**	**30.193**	**30.831**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Computer Network Defense (CND) ashore sites represent multiple CND architectures/capabilities within each build that are specifically procured for each site based on the site mission and latest cyber threat. CND builds and variants are specifically designed to each site in accordance with CND's rapid Information Technology (IT) fielding construct.

CND ashore sites include: IT 21st Century (IT-21) Networks Operation Centers (NOCs) which provide regional protection to shore and afloat assets within their area of responsibility; Navy Cyber Defense Operations Command (NCDOC), the designated Navy CND service provider, whose mission is to coordinate, monitor, analyze, and oversee the defense of Navy computer networks and NOCs who are responsible for accomplishing CND missions; Theater Network Operations and Security Centers (TNOSCs) and Outside the Continental United States (OCONUS) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSCs). The ONE-Net security initiative consolidates LNSCs to their parent TNOSCs for more efficient operation and enables greater failover capability between ONE-Net sites; Broadcast Control Authorities (BCAs); Fixed Submarine Broadcast System (FSBS) which supports enhancements of the Nuclear Command, Control, and Communications, Navy (NC3-N) network (details held at a higher classification); P-913: Shore Based Enterprise Network Enhancements for the Naval Computer and Telecommunications Area Master Station Atlantic (NCTAMSLANT) Facility (MILCON P-913), which requires the CND capability; Pre-Planned Product Improvement (P3I) NCDOC upgrade which replaces end-of-life equipment with more robust capability at NCDOC to enhance the command's Cyber Defense Mission Support System (CDMSS) architectural framework to provide the necessary storage capability and processing power to ingest and analyze increased volumes of data from additional sources; The Virtual Training Environment (VTE) initiative which will transition equipment to an approved solution at the schoolhouses. CND is designated Training Support Agent (TSA); and CND Production Labs that provide CND architecture for production representative systems.

CND also provides ashore infrastructure to provision the latest cyber security updates to all afloat tactical units; including Consolidated Afloat Networks and Enterprise Services (CANES), Integrated Shipboard Network System (ISNS) and other networks, which roll up cyber network data to NCDOC. CND will deploy technologies to shore commands and the shore-based afloat infrastructure to improve network defense and security wholeness, countering intruders and attacks aimed at disrupting tactical communications at the afloat gateways and shore commands; this will help the Navy's ability to prevent, constrain, and mitigate cyber-attacks and critical vulnerabilities, as well as provide greater resiliency, awareness, data analytics, redundancy, and diversity into the Navy's Defense-in-Depth (DiD) strategy. CND shore sites will have modern network sensors, improving the ability to detect unusual network patterns and prevent/deter malicious attacks.

CND procurement/installation quantities represent multiple CND architectures with an assortment of builds that are specifically designed to each site. Costs may vary by site and variant.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 1 / Computer Network Defense (CND) Increment 2- Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore	**Modification Type:** Various	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)												
B Kits												
Recurring												
1.1.1) Networks Operation Centers (NOC) - NonOrganic	33 / 35.391	4 / 3.751	4 / 3.705	4 / 3.788	- / -	4 / 3.788	4 / 3.872	4 / 3.956	4 / 4.040	4 / 4.124	Continuing	Continuing
1.1.2) Navy Cyber Defense Operations Command (NCDOC) - NonOrganic	15 / 17.187	2 / 2.019	2 / 1.943	2 / 1.990	- / -	2 / 1.990	2 / 2.010	2 / 2.030	2 / 2.046	2 / 2.070	Continuing	Continuing
1.1.3) Theater Network Operations & Security Center (TNOSC) - NonOrganic	24 / 26.373	3 / 2.700	3 / 2.805	3 / 2.910	- / -	3 / 2.910	3 / 2.925	3 / 2.940	3 / 3.073	3 / 3.212	Continuing	Continuing
1.1.4) Broadcast Control Authorities (BCA) - NonOrganic	24 / 7.352	4 / 0.711	4 / 0.680	4 / 0.698	- / -	4 / 0.698	4 / 0.701	3 / 0.528	4 / 0.736	4 / 0.770	Continuing	Continuing
1.1.5) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSC) - NonOrganic (10)	24 / 2.258	- / -	3 / 0.225	- / -	- / -	- / -	- / -	3 / 0.225	- / -	- / -	Continuing	Continuing
1.1.6) Fixed Submarine Broadcast System (FSBS) - NonOrganic (11)	14 / 4.080	7 / 2.184	7 / 2.100	11 / 3.306	- / -	11 / 3.306	11 / 3.311	11 / 3.328	11 / 3.478	11 / 3.635	Continuing	Continuing
1.1.7) P-913: Shore Based Enterprise Network Enhancements - NonOrganic (12)	- / -	1 / 2.913	1 / 0.943	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.856
1.1.8) Pre-Planned Product Improvement (P3I): NCDOC Upgrade - Organic	5 / 15.984	1 / 1.992	1 / 2.013	1 / 2.093	- / -	1 / 2.093	1 / 2.135	1 / 2.226	1 / 2.227	1 / 2.228	Continuing	Continuing
1.1.9) Virtual Training Environment (VTE) - Organic	4 / 4.270	1 / 0.835	1 / 0.828	1 / 0.861	- / -	1 / 0.861	1 / 0.878	1 / 0.897	1 / 0.907	1 / 0.918	Continuing	Continuing
1.1.10) CND Production Labs - Organic	21 / 28.404	3 / 4.218	3 / 4.167	3 / 4.334	- / -	3 / 4.334	3 / 4.420	3 / 4.617	3 / 4.652	3 / 4.690	Continuing	Continuing
Subtotal: Recurring	*- / 141.299*	*- / 21.323*	*- / 19.409*	*- / 19.980*	*- / -*	*- / 19.980*	*- / 20.252*	*- / 20.747*	*- / 21.159*	*- / 21.647*	*Continuing*	*Continuing*
Subtotal: Computer Network Defense (CND) Increment 2- Ashore (DA070)	*164 / 141.299*	*26 / 21.323*	*29 / 19.409*	*29 / 19.980*	*- / -*	*29 / 19.980*	*29 / 20.252*	*31 / 20.747*	*29 / 21.159*	*29 / 21.647*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 141.299*	*- / 21.323*	*- / 19.409*	*- / 19.980*	*- / -*	*- / 19.980*	*- / 20.252*	*- / 20.747*	*- / 21.159*	*- / 21.647*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Train-the-Trainer	- / 4.970	- / 0.952	- / 0.995	- / 1.018	- / 0.000	- / 1.018	- / 1.200	- / 1.300	- / 1.350	- / 1.389	Continuing	Continuing
2.2) Production Support	- / 6.790	- / 0.527	- / 0.841	- / 0.844	- / 0.000	- / 0.844	- / 0.932	- / 1.029	- / 1.107	- / 1.097	Continuing	Continuing
2.3) Design Services Allocation (DSA)	- / 5.218	- / 0.449	- / 0.559	- / 0.878	- / 0.000	- / 0.878	- / 0.955	- / 0.869	- / 0.987	- / 1.059	Continuing	Continuing
Subtotal: Support	*- / 16.978*	*- / 1.928*	*- / 2.395*	*- / 2.740*	*- / -*	*- / 2.740*	*- / 3.087*	*- / 3.198*	*- / 3.444*	*- / 3.545*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)	- / 31.962	- / 4.683	- / 4.988	- / 5.238	- / 0.000	- / 5.238	- / 5.359	- / 5.526	- / 5.590	- / 5.639	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 1 / Computer Network Defense (CND) Increment 2- Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore	**Modification Type:** Various	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Subtotal: Installation	*- / 31.962*	*- / 4.683*	*- / 4.988*	*- / 5.238*	*- / -*	*- / 5.238*	*- / 5.359*	*- / 5.526*	*- / 5.590*	*- / 5.639*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**190.239**	**27.934**	**26.792**	**27.958**	**0.000**	**27.958**	**28.698**	**29.471**	**30.193**	**30.831**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 1 / Computer Network Defense (CND) Increment 2- Ashore (DA070)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)

Manufacturer Information

Manufacturer Name: CND Equipment - Naval Information Warfare Center (NIWC) Atlantic | Manufacturer Location: Charleston, SC

Administrative Leadtime *(in Months)*: 2 | Production Leadtime *(in Months)*: 3

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	Mar 2019	Mar 2020	Mar 2021				

Installation Information

Method of Implementation: Installed:: Installation Name: Computer Network Defense (CND) Increment 2- Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	134 / 31.962	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	134 / 31.962
FY 2019	- / -	21 / 4.683	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	21 / 4.683
FY 2020	- / -	- / -	24 / 4.988	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 4.988
FY 2021	- / -	- / -	- / -	24 / 5.238	0 / 0.000	24 / 5.238	- / -	- / -	- / -	- / -	0 / 0.000	24 / 5.238
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	24 / 5.359	- / -	- / -	- / -	0 / 0.000	24 / 5.359
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	26 / 5.526	- / -	- / -	0 / 0.000	26 / 5.526
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 5.590	- / -	0 / 0.000	24 / 5.590
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 5.639	0 / 0.000	24 / 5.639
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	134 / 31.962	21 / 4.683	24 / 4.988	24 / 5.238	0 / 0.000	24 / 5.238	24 / 5.359	26 / 5.526	24 / 5.590	24 / 5.639	Continuing	Continuing

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	134	-	12	-	9	-	10	7	7	-	10	7	7	-	10	7	7	-	10	8	8	-	10	7	7	-	10	7	7	Cont.	Cont.
Out	134	-	12	-	9	-	10	7	7	-	10	7	7	-	10	7	7	-	10	8	8	-	10	7	7	-	10	7	7	Cont.	Cont.

Method of Implementation (Organic): Pre-Planned Product Improvement (P3I): NCDOC Upgrade - Not Installed | **Installation Quantity:** 0

Method of Implementation (Organic): Virtual Training Environment (VTE) - Not Installed | **Installation Quantity:** 0

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 1 / Computer Network Defense (CND) Increment 2- Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)		
Installation Information		
Method of Implementation (Organic): CND Production Labs - Not Installed	**Installation Quantity:** 0	

Footnotes:

(10) 1.1.5) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSC) - NonOrganic: FY21 decrease aligns to the ONE-Net security initiative reconfiguration effort to create increased failover capability between ONE-Net sites. Tech refresh occurs every three years.

(11) 1.1.6) Fixed Submarine Broadcast System (FSBS) - NonOrganic: FY21 quantity increase aligns to additional sites requiring the FSBS cybersecurity capability (Details held at a higher classification).

(12) 1.1.7) P-913: Shore Based Enterprise Network Enhancements - NonOrganic: FY21 decrease reflects the last year of a 2-year Shore Based Enterprise Network Enhancement effort.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 2 / Navy Cryptography (Crypto) - Afloat (DA071)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	210.217	40.031	35.281	34.742	0.000	34.742	36.650	37.923	30.796	39.040	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	210.217	40.031	35.281	34.742	0.000	34.742	36.650	37.923	30.796	39.040	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**210.217**	**40.031**	**35.281**	**34.742**	**0.000**	**34.742**	**36.650**	**37.923**	**30.796**	**39.040**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Navy Cryptography (Crypto) program is designated as Department of Navy's (DoN) Cryptographic Modernization Program Office (CMPO). CMPO procures, installs, and provides life-cycle support for National Security Agency (NSA) Type-1 end cryptographic units for United States Navy (USN) (to include Military Sealift Command (MSC) platforms), United States Marine Corps (USMC), and United States Coast Guard (USCG). Navy Crypto afloat equipment includes: Families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories for all Services.

Crypto Data products include: Advanced Cryptographic Capabilities (ACC), which provide National Security Agency (NSA) mandated cryptographic security software modernization of various communications security devices by cease key dates (details held at a higher classification); In-Line Network Encryptors (INE); KIV-7M (COMSEC Serial Crypto Replacement); KW-46; Cryptographic Universal Enclosures (CUE), and KGV-11M TRANSEC. Cryptographic Modernization 2 (CM2) provides NSA mandated cryptographic modernization of various communications security devices (details held at a higher classification).

Crypto Voice products include: VINSON/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM). VACM is the modern cryptographic product replacement for legacy secure voice products.

Naval Information Warfare Systems Command (NAVWAR) is the VACM Central Procuring Agency for the USN to include the MSC, Naval Air Systems Command (NAVAIR), USMC and USCG.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 2 / Navy Cryptography (Crypto) - Afloat (DA071)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Ship	**Modification Type:** Various	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)												
B Kits												
Recurring												
1.1.1) Cryptographic Universal Enclosures (CUE) CSRR - NonOrganic	58 / 11.073	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	58 / 11.073
1.1.2) COMSEC Serial Crypto Replacement (Phase II) - NonOrganic	117 / 2.117	1 / 0.020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	118 / 2.137
1.1.3) VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - NonOrganic (13)	126 / 28.980	90 / 20.700	84 / 19.320	73 / 16.790	- / -	73 / 16.790	83 / 19.090	86 / 19.780	- / -	- / -	- / -	542 / 124.660
1.1.4) In-Line Network Encryptors (INE) - Organic (14)	5,110 / 67.602	139 / 1.668	193 / 2.316	142 / 1.704	- / -	142 / 1.704	136 / 1.632	189 / 2.268	146 / 1.752	103 / 1.236	Continuing	Continuing
1.1.5) Advanced Cryptographic Capability (ACC) - Organic (15)	- / -	24 / 12.000	13 / 6.500	2 / 1.000	- / -	2 / 1.000	2 / 1.000	2 / 1.000	2 / 1.000	5 / 2.500	- / -	50 / 25.000
1.1.6) KGV-11M Transmission Security (TRANSEC) - Organic (16)	- / -	- / -	87 / 1.566	478 / 8.604	- / -	478 / 8.604	478 / 8.604	478 / 8.604	150 / 2.700	150 / 2.700	Continuing	Continuing
1.1.7) Cryptographic Modernization 2 (CM2) - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 19.000	61 / 30.500	Continuing	Continuing
Subtotal: Recurring	*- / 109.772*	*- / 34.388*	*- / 29.702*	*- / 28.098*	*- / -*	*- / 28.098*	*- / 30.326*	*- / 31.652*	*- / 24.452*	*- / 36.936*	*Continuing*	*Continuing*
Subtotal: Navy Cryptography (Crypto) - Afloat (DA071)	*5,411 / 109.772*	*254 / 34.388*	*377 / 29.702*	*695 / 28.098*	*- / -*	*695 / 28.098*	*699 / 30.326*	*755 / 31.652*	*336 / 24.452*	*319 / 36.936*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 109.772*	*- / 34.388*	*- / 29.702*	*- / 28.098*	*- / -*	*- / 28.098*	*- / 30.326*	*- / 31.652*	*- / 24.452*	*- / 36.936*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Production Support	- / 24.978	- / 1.221	- / 1.074	- / 0.981	- / -	- / 0.981	- / 1.189	- / 1.032	- / 0.748	- / 0.656	Continuing	Continuing
2.2) DSA	- / 42.272	- / 0.638	- / 0.429	- / 0.482	- / -	- / 0.482	- / 0.437	- / 0.420	- / 0.476	- / 0.123	Continuing	Continuing
Subtotal: Support	*- / 67.250*	*- / 1.859*	*- / 1.503*	*- / 1.463*	*- / -*	*- / 1.463*	*- / 1.626*	*- / 1.452*	*- / 1.224*	*- / 0.779*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)	- / 33.195	- / 3.784	- / 4.076	- / 5.181	- / 0.000	- / 5.181	- / 4.698	- / 4.819	- / 5.120	- / 1.325	- / 0.000	- / 62.198
Subtotal: Installation	*- / 33.195*	*- / 3.784*	*- / 4.076*	*- / 5.181*	*- / -*	*- / 5.181*	*- / 4.698*	*- / 4.819*	*- / 5.120*	*- / 1.325*	*- / 0.000*	*- / 62.198*
Total												
Total Cost (Procurement + Support + Installation)	**210.217**	**40.031**	**35.281**	**34.742**	**0.000**	**34.742**	**36.650**	**37.923**	**30.796**	**39.040**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 2 / Navy Cryptography (Crypto) - Afloat (DA071)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)

Manufacturer Information

Manufacturer Name: Communications Security (COMSEC) (Phase II) - Raytheon (NSA) | Manufacturer Location: Waltham, MA

Administrative Leadtime *(in Months)*: 4 | Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019						
Delivery Dates	Sep 2019						

Manufacturer Name: VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Raytheon (USAF) (17) | Manufacturer Location: Largo, FL

Administrative Leadtime *(in Months)*: 5 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Mar 2021				
Delivery Dates	Jan 2020	Jan 2021	Mar 2022				

Manufacturer Name: In-Line Network Encryptors (INE) - NSA | Manufacturer Location: Fort Meade, MD

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021				
Delivery Dates	Aug 2019	Aug 2020	Aug 2021				

Manufacturer Name: Advanced Cryptographic Capability (ACC) - NSA | Manufacturer Location: Fort Meade, MD

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021				
Delivery Dates	Aug 2020	Aug 2020	Aug 2021				

Manufacturer Name: KGV-11M Transmission Security (TRANSEC) - VIASAT | Manufacturer Location: Carlsbad, CA

Administrative Leadtime *(in Months)*: 3 | Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates		Jan 2020	Jan 2021				
Delivery Dates		Jan 2021	Jan 2022				

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 2 / Navy Cryptography (Crypto) - Afloat (DA071)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)

Installation Information

Method of Implementation: Installed:: Installation Name: Navy Cryptography (Crypto) - Afloat

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	255 / 33.195	46 / 3.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	301 / 36.979
FY 2019	- / -	- / -	66 / 4.076	25 / 1.506	0 / 0.000	25 / 1.506	- / -	- / -	- / -	- / -	0 / 0.000	91 / 5.582
FY 2020	- / -	- / -	- / -	61 / 3.675	0 / 0.000	61 / 3.675	23 / 1.385	- / -	- / -	- / -	0 / 0.000	84 / 5.060
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	55 / 3.313	18 / 1.084	- / -	- / -	0 / 0.000	73 / 4.397
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 3.735	21 / 1.265	- / -	0 / 0.000	83 / 5.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	64 / 3.855	22 / 1.325	0 / 0.000	86 / 5.180
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	255 / 33.195	46 / 3.784	66 / 4.076	86 / 5.181	0 / 0.000	86 / 5.181	78 / 4.698	80 / 4.819	85 / 5.120	22 / 1.325	0 / 0.000	718 / 62.198

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	251	4	20	14	12	-	21	26	19	25	22	23	16	23	6	27	22	18	7	28	27	21	7	21	36	22	-	-	-	-	718
Out	251	4	20	14	12	-	21	26	19	25	22	23	16	23	6	27	22	18	7	28	27	21	7	21	36	22	-	-	-	-	718

Method of Implementation (Organic): In-Line Network Encryptors (INE) **Installation Quantity:** 0

Method of Implementation (Organic): Advanced Cryptographic Capability (ACC) **Installation Quantity:** 50

Method of Implementation (Organic): KGV-11M Transmission Security (TRANSEC) **Installation Quantity:** 0

Method of Implementation (Organic): Cryptographic Modernization 2 (CM2) **Installation Quantity:** 0

Footnotes:

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 2 / Navy Cryptography (Crypto) - Afloat (DA071)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(13) 1.1.3) VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - NonOrganic: FY21 decrease aligns to the fielding plan which is in accordance with the National Security Agency (NSA) cease key dates (classified) for Top Secret (TS) and Secret (S) circuits. VACM NonOrganic quantities are procured/installed per ship set/platform. Installations carry over into Q1 due to delivery lead-times of VACM variants which make up a ship set; this ensures quantities of VACM variants received are sufficient to make complete shipsets for the platforms/hulls.

(14) 1.1.4) In-Line Network Encryptors (INE) - Organic: FY21 decrease aligns to inventory levels in accordance with the NSA cease key dates (classified) for TS and S circuits.

(15) 1.1.5) Advanced Cryptographic Capability (ACC) - Organic: FY21 decrease due to change in requirement that reduces the number of required devices to support ACC to meet the NSA mandated cryptographic security software modernization of various communications security devices.

(16) 1.1.6) KGV-11M Transmission Security (TRANSEC) - Organic: FY21 increase aligns to the requirement to modernize legacy Transmission Security (TRANSEC) devices in accordance with NSA cease key dates.

(17) Manufacturer Information: VACM - FY21 award date shifted from January to March in accordance with the United States Air Force contract schedule.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 3 / Navy Cryptography (Crypto) - Ashore (DA071)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	56.421	38.353	34.728	29.128	0.000	29.128	32.891	33.504	41.067	33.508	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	56.421	38.353	34.728	29.128	0.000	29.128	32.891	33.504	41.067	33.508	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**56.421**	**38.353**	**34.728**	**29.128**	**0.000**	**29.128**	**32.891**	**33.504**	**41.067**	**33.508**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Navy Cryptography (Crypto) ashore equipment includes: Families of Communication Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products, and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories for all Services. Navy Crypto Ashore sites include: United States Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG) facilities, and Ballistic Missile Defense facilities, production/integration sites, and training sites.

Crypto Data products include: Advanced Cryptographic Capabilities (ACC) which provide NSA mandated cryptographic security software modernization of various communications security devices by cease key dates (details held at a higher classification); Cryptographic Modernization 2 (CM2) provides NSA mandated cryptographic modernization of various communications security devices (details held at a higher classification).

Crypto Voice products include: VINSON/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM).

Naval Information Warfare Systems Command (NAVWAR) is the VACM Central Procuring Agency for the USN to include the Military Sealift Command (MSC), Naval Air Systems Command (NAVAIR), USMC and USCG.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 3 / Navy Cryptography (Crypto) - Ashore (DA071)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore	**Modification Type:** Initial	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)												
B Kits												
Recurring												
1.1.1) VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Organic [18]	2,853 / 32.561	1,242 / 14.283	1,160 / 13.340	1,146 / 13.179	- / -	1,146 / 13.179	1,226 / 14.099	1,318 / 15.157	1,370 / 15.755	- / -	- / -	10,315 / 118.374
1.1.2) Advanced Cryptographic Capability (ACC) - Organic [19]	- / -	16 / 8.000	9 / 4.500	3 / 1.500	- / -	3 / 1.500	4 / 2.000	4 / 2.000	4 / 2.000	6 / 3.000	Continuing	Continuing
1.1.3) VACM - NonOrganic [20]	25 / 9.625	37 / 14.245	32 / 12.320	27 / 10.395	- / -	27 / 10.395	34 / 13.090	31 / 11.935	- / -	- / -	- / -	186 / 71.610
1.1.4) Cryptographic Modernization 2 (CM2) - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 19.000	60 / 30.000	Continuing	Continuing
Subtotal: Recurring	*- / 42.186*	*- / 36.528*	*- / 30.160*	*- / 25.074*	*- / -*	*- / 25.074*	*- / 29.189*	*- / 29.092*	*- / 36.755*	*- / 33.000*	*Continuing*	*Continuing*
Subtotal: Navy Cryptography (Crypto) - Ashore (DA071)	*2,878 / 42.186*	*1,295 / 36.528*	*1,201 / 30.160*	*1,176 / 25.074*	*- / -*	*1,176 / 25.074*	*1,264 / 29.189*	*1,353 / 29.092*	*1,412 / 36.755*	*66 / 33.000*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 42.186*	*- / 36.528*	*- / 30.160*	*- / 25.074*	*- / -*	*- / 25.074*	*- / 29.189*	*- / 29.092*	*- / 36.755*	*- / 33.000*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Production Support	- / 12.412	- / 1.232	- / 1.021	- / 0.890	- / -	- / 0.890	- / 1.032	- / 1.050	- / 1.302	- / 0.508	Continuing	Continuing
Subtotal: Support	*- / 12.412*	*- / 1.232*	*- / 1.021*	*- / 0.890*	*- / -*	*- / 0.890*	*- / 1.032*	*- / 1.050*	*- / 1.302*	*- / 0.508*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)	- / 1.823	- / 0.593	- / 3.547	- / 3.164	- / 0.000	- / 3.164	- / 2.670	- / 3.362	- / 3.010	- / 0.000	- / 0.000	- / 18.169
Subtotal: Installation	*- / 1.823*	*- / 0.593*	*- / 3.547*	*- / 3.164*	*- / -*	*- / 3.164*	*- / 2.670*	*- / 3.362*	*- / 3.010*	*- / -*	*- / 0.000*	*- / 18.169*
Total												
Total Cost (Procurement + Support + Installation)	**56.421**	**38.353**	**34.728**	**29.128**	**0.000**	**29.128**	**32.891**	**33.504**	**41.067**	**33.508**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 3 / Navy Cryptography (Crypto) - Ashore (DA071)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)

Manufacturer Information

Manufacturer Name: VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Raytheon (USAF) [21]

Manufacturer Location: Largo, FL

Administrative Leadtime *(in Months)*: 5

Production Leadtime *(in Months)*: 12

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Mar 2021				
Delivery Dates	Jan 2020	Jan 2021	Mar 2022				

Manufacturer Name: Advanced Cryptographic Capability (ACC) - NSA

Manufacturer Location: Fort Meade, MD

Administrative Leadtime *(in Months)*: 3

Production Leadtime *(in Months)*: 7

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Jan 2019	Jan 2020	Jan 2021				
Delivery Dates	Feb 2020	Aug 2020	Aug 2021				

Installation Information

Method of Implementation: Installed:: Installation Name: Navy Cryptography (Crypto) - Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	19 / 1.823	6 / 0.593	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	25 / 2.416
FY 2019	- / -	- / -	37 / 3.547	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	37 / 3.547
FY 2020	- / -	- / -	- / -	32 / 3.164	0 / 0.000	32 / 3.164	- / -	- / -	- / -	- / -	0 / 0.000	32 / 3.164
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	27 / 2.670	- / -	- / -	- / -	0 / 0.000	27 / 2.670
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	34 / 3.362	- / -	- / -	0 / 0.000	34 / 3.362
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	31 / 3.010	- / -	0 / 0.000	31 / 3.010
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	19 / 1.823	6 / 0.593	37 / 3.547	32 / 3.164	0 / 0.000	32 / 3.164	27 / 2.670	34 / 3.362	31 / 3.010	- / -	0 / 0.000	186 / 18.169

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 3 / Navy Cryptography (Crypto) - Ashore (DA071)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)

Installation Information

Method of Implementation: Installed:: Installation Name: Navy Cryptography (Crypto) - Ashore

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	19	-	6	-	-	-	26	6	5	-	9	22	1	-	27	-	-	-	34	-	-	-	27	4	-	-	-	-	-	-	186
Out	19	-	6	-	-	-	26	6	5	-	9	22	1	-	27	-	-	-	34	-	-	-	27	4	-	-	-	-	-	-	186

Method of Implementation (Organic): VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) **Installation Quantity:** 10315

Method of Implementation (Organic): Advanced Cryptographic Capability (ACC) **Installation Quantity:** 0

Method of Implementation (Organic): Cryptographic Modernization 2 (CM2) **Installation Quantity:** 0

Footnotes:

(18) 1.1.1) VINSON/Advanced Narrowband Digital Voice Terminal - Organic: FY21 decrease aligns to the fielding plan which is in accordance with the National Security Agency (NSA) cease key dates (classified) for Top Secret (TS) and Secret (S) circuits.

(19) 1.1.2) Advanced Cryptographic Capability (ACC) - Organic: FY21 decrease due to change in requirement that reduces the number of required devices to support ACC to meet the NSA mandated cryptographic security software modernization of various communications security devices.

(20) 1.1.3) VACM - NonOrganic: FY21 decrease aligns to the fielding plan which is in accordance with the NSA cease key dates (classified) for TS and S circuits. VACM NonOrganic quantities are grouped per shore site, not device.

(21) Manufacturer Information: VACM - FY21 award date shifted from January to March in accordance with the United States Air Force contract schedule.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 4 / Key Management (KM) - Afloat (DA005)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	66.142	5.073	5.648	7.022	0.000	7.022	8.211	6.828	6.431	5.977	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	66.142	5.073	5.648	7.022	0.000	7.022	8.211	6.828	6.431	5.977	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**66.142**	**5.073**	**5.648**	**7.022**	**0.000**	**7.022**	**8.211**	**6.828**	**6.431**	**5.977**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Key Management (KM) is a collection of Tier 2 security equipment, Key Management Infrastructure (KMI), and Tier 3 equipment Simple Key Loader (SKL).

KMI is the next generation Tier 2 product to replace the legacy Local Management Device/Key Processor (LMD/KP) Electronic Key Management System (EKMS). KMI includes the Management Client (MGC), Advanced Key Processor (AKP) and High Assurance Internet Protocol Equipment (HAIPE) devices. KMI provides a net-centric, web based architecture for the ordering, management, and distribution of all cryptographic key material to support Navy users.

The AN/PYQ-10 SKL is a ruggedized, portable, hand-held fill device, for securely receiving, storing, and transferring data between compatible cryptographic and communications equipment. The SKL is backward-compatible with existing End Cryptographic Units (ECU) and forward-compatible with future security equipment and systems, including KMI.

KMI Tech Refresh is a hardware and software upgrade to KMI Spiral 2 that is mandated by National Security Agency (NSA) to occur every five-years.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 4 / Key Management (KM) - Afloat (DA005)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Ship	**Modification Type:** Various	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)												
B Kits												
Recurring												
1.1.1) Simple Key Loader (SKL) - Organic [22]	10,198 / 48.768	659 / 2.333	212 / 0.752	237 / 0.843	- / -	237 / 0.843	659 / 2.349	1,006 / 3.592	995 / 3.553	1,064 / 3.820	Continuing	Continuing
1.1.2) Key Management Infrastructure (KMI) Tech Refresh - NonOrganic [23]	3 / 0.102	28 / 0.959	38 / 1.305	42 / 1.448	- / -	42 / 1.448	37 / 1.278	19 / 0.657	17 / 0.591	16 / 0.564	Continuing	Continuing
Subtotal: Recurring	*- / 48.870*	*- / 3.292*	*- / 2.057*	*- / 2.291*	*- / -*	*- / 2.291*	*- / 3.627*	*- / 4.249*	*- / 4.144*	*- / 4.384*	*Continuing*	*Continuing*
Subtotal: Key Management (KM) - Afloat (DA005)	*10,201 / 48.870*	*687 / 3.292*	*250 / 2.057*	*279 / 2.291*	*- / -*	*279 / 2.291*	*696 / 3.627*	*1,025 / 4.249*	*1,012 / 4.144*	*1,080 / 4.384*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 48.870*	*- / 3.292*	*- / 2.057*	*- / 2.291*	*- / -*	*- / 2.291*	*- / 3.627*	*- / 4.249*	*- / 4.144*	*- / 4.384*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Production Support	- / 3.073	- / 0.119	- / 0.080	- / 0.117	- / -	- / 0.117	- / 0.129	- / 0.146	- / 0.145	- / 0.169	Continuing	Continuing
2.2) Train the Trainer	- / 0.435	- / 0.087	- / 0.123	- / 0.088	- / -	- / 0.088	- / 0.099	- / 0.105	- / 0.115	- / 0.210	Continuing	Continuing
2.3) DSA	- / 13.714	- / 1.125	- / 2.088	- / 2.126	- / -	- / 2.126	- / 2.056	- / 1.178	- / 0.877	- / 0.814	Continuing	Continuing
Subtotal: Support	*- / 17.222*	*- / 1.331*	*- / 2.291*	*- / 2.331*	*- / -*	*- / 2.331*	*- / 2.284*	*- / 1.429*	*- / 1.137*	*- / 1.193*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)	- / 0.050	- / 0.450	- / 1.300	- / 2.400	- / 0.000	- / 2.400	- / 2.300	- / 1.150	- / 1.150	- / 0.400	Continuing	Continuing
Subtotal: Installation	*- / 0.050*	*- / 0.450*	*- / 1.300*	*- / 2.400*	*- / -*	*- / 2.400*	*- / 2.300*	*- / 1.150*	*- / 1.150*	*- / 0.400*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**66.142**	**5.073**	**5.648**	**7.022**	**0.000**	**7.022**	**8.211**	**6.828**	**6.431**	**5.977**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 4 / Key Management (KM) - Afloat (DA005)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)

Manufacturer Information

Manufacturer Name: Simple Key Loader (SKL) - Sierra Nevada Corporation — Manufacturer Location: Sparks, NV

Administrative Leadtime *(in Months)*: 4 — Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019	Feb 2020	Feb 2021				
Delivery Dates	Apr 2019	Apr 2020	Apr 2021				

Manufacturer Name: Key Management Infrastructure (KMI) Tech Refresh - NSA — Manufacturer Location: Fort Meade, MD

Administrative Leadtime *(in Months)*: 5 — Production Leadtime *(in Months)*: 4

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020	Mar 2021				
Delivery Dates	Jul 2019	Jul 2020	Jul 2021				

Installation Information

Method of Implementation: Installed:: Installation Name: Key Management (KM) - Afloat

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	1 / 0.050	2 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.150
FY 2019	- / -	7 / 0.350	21 / 0.950	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	28 / 1.300
FY 2020	- / -	- / -	7 / 0.350	31 / 1.550	0 / 0.000	31 / 1.550	- / -	- / -	- / -	- / -	0 / 0.000	38 / 1.900
FY 2021	- / -	- / -	- / -	17 / 0.850	0 / 0.000	17 / 0.850	25 / 1.250	- / -	- / -	- / -	0 / 0.000	42 / 2.100
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	21 / 1.050	16 / 0.800	- / -	- / -	0 / 0.000	37 / 1.850
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.350	12 / 0.600	- / -	0 / 0.000	19 / 0.950
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 0.550	6 / 0.300	0 / 0.000	17 / 0.850
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.100	14 / 0.000	16 / 0.100
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	1 / 0.050	9 / 0.450	28 / 1.300	48 / 2.400	0 / 0.000	48 / 2.400	46 / 2.300	23 / 1.150	23 / 1.150	8 / 0.400	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 4 / Key Management (KM) - Afloat (DA005)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)

Installation Information

Method of Implementation: Installed:: Installation Name: Key Management (KM) - Afloat

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	1	-	1	1	7	6	9	6	7	9	7	8	24	7	7	8	24	11	4	1	7	5	5	2	11	2	2	1	3	Cont.	Cont.
Out	1	-	1	1	7	6	9	6	7	9	7	8	24	7	7	8	24	11	4	1	7	5	5	2	11	2	2	1	3	Cont.	Cont.

Method of Implementation (Organic): Simple Key Loader (SKL) - Not Installed **Installation Quantity:** 0

Footnotes:

(22) 1.1.1) Simple Key Loader (SKL) - Organic: FY21 increase aligns to the attrition rate caused by the seven-year battery life span. SKL procurements are required to replenish the fleet with key-fill devices required to conduct secure, mission-critical communications. Quantities fluctuate to remain within the Inventory Objective Capability (IOC).

(23) 1.1.2) KMI Tech Refresh - Nonorganic: FY21 increase is the result of National Security Agency (NSA) mandated five-year refresh cycle. KMI Tech Refresh modernizes all KMI Spiral 2 systems.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 5 / Key Management (KM) - Ashore (DA005)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	40.050	6.212	6.025	4.742	0.000	4.742	3.787	5.425	6.067	6.769	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	40.050	6.212	6.025	4.742	0.000	4.742	3.787	5.425	6.067	6.769	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**40.050**	**6.212**	**6.025**	**4.742**	**0.000**	**4.742**	**3.787**	**5.425**	**6.067**	**6.769**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Key Management (KM) ashore sites include: United States Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG) facilities, production integration sites, and training sites. KM ashore systems include: Simple Key Loader (SKL), Key Management Infrastructure (KMI) Spiral 1 & 2 and KMI Tech Refresh.

KMI is the next generation Tier 2 product to replace the legacy Local Management Device/Key Processor (LMD/KP) Electronic Key Management System (EKMS). KMI includes the Management Client (MGC), Advanced Key Processor (AKP), and High Assurance Internet Protocol Equipment (HAIPE) devices. KMI provides a net-centric, web based architecture for the ordering, management, and distribution of all cryptographic key material to support Navy users.

The AN/PYQ-10 SKL is a ruggedized, portable, hand-held fill device, for securely receiving, storing, and transferring data between compatible cryptographic and communications equipment. The SKL is backward-compatible with existing End Cryptographic Units (ECU) and forward-compatible with future security equipment and systems, including KMI.

KMI Tech Refresh is a hardware and software upgrade to KMI Spiral 2 that is mandated by National Security Agency (NSA) to occur every five-years.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 5 / Key Management (KM) - Ashore (DA005)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore	**Modification Type:** Various	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)												
B Kits												
Recurring												
1.1.1) Key Management Infrastructure (KMI) Tech Refresh - NonOrganic [24]	6 / 0.205	67 / 2.295	51 / 1.751	53 / 1.827	- / -	53 / 1.827	16 / 0.553	7 / 0.242	30 / 1.043	49 / 1.727	Continuing	Continuing
1.1.2) Simple Key Loader - Organic [25]	11,520 / 35.217	574 / 2.032	108 / 0.383	171 / 0.608	- / -	171 / 0.608	517 / 1.843	1,306 / 4.664	974 / 3.478	877 / 3.135	Continuing	Continuing
Subtotal: Recurring	*- / 35.422*	*- / 4.327*	*- / 2.134*	*- / 2.435*	*- / -*	*- / 2.435*	*- / 2.396*	*- / 4.906*	*- / 4.521*	*- / 4.862*	*Continuing*	*Continuing*
Subtotal: Key Management (KM) - Ashore (DA005)	*11,526 / 35.422*	*641 / 4.327*	*159 / 2.134*	*224 / 2.435*	*- / -*	*224 / 2.435*	*533 / 2.396*	*1,313 / 4.906*	*1,004 / 4.521*	*926 / 4.862*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 35.422*	*- / 4.327*	*- / 2.134*	*- / 2.435*	*- / -*	*- / 2.435*	*- / 2.396*	*- / 4.906*	*- / 4.521*	*- / 4.862*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Production Support	- / 4.105	- / 0.160	- / 0.094	- / 0.124	- / -	- / 0.124	- / 0.117	- / 0.173	- / 0.169	- / 0.208	Continuing	Continuing
2.2) Train the Trainer	- / 0.523	- / 0.135	- / 0.075	- / 0.092	- / -	- / 0.092	- / 0.097	- / 0.117	- / 0.117	- / 0.196	Continuing	Continuing
2.3) DSA	- / -	- / 1.415	- / 1.122	- / 1.166	- / -	- / 1.166	- / 0.352	- / 0.154	- / 0.660	- / 1.078	Continuing	Continuing
Subtotal: Support	*- / 4.628*	*- / 1.710*	*- / 1.291*	*- / 1.382*	*- / -*	*- / 1.382*	*- / 0.566*	*- / 0.444*	*- / 0.946*	*- / 1.482*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)	- / 0.000	- / 0.175	- / 2.600	- / 0.925	- / 0.000	- / 0.925	- / 0.825	- / 0.075	- / 0.600	- / 0.425	Continuing	Continuing
Subtotal: Installation	*- / 0.000*	*- / 0.175*	*- / 2.600*	*- / 0.925*	*- / -*	*- / 0.925*	*- / 0.825*	*- / 0.075*	*- / 0.600*	*- / 0.425*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**40.050**	**6.212**	**6.025**	**4.742**	**0.000**	**4.742**	**3.787**	**5.425**	**6.067**	**6.769**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 5 / Key Management (KM) - Ashore (DA005)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)

Manufacturer Information

Manufacturer Name: Simple Key Loader (SKL) - Sierra Nevada Corporation — Manufacturer Location: Sparks, NV

Administrative Leadtime *(in Months)*: 4 — Production Leadtime *(in Months)*: 2

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Feb 2019	Feb 2020	Feb 2021				
Delivery Dates	Apr 2019	Apr 2020	Apr 2021				

Manufacturer Name: Key Management Infrastructure (KMI) Tech Refresh - NSA — Manufacturer Location: Fort Meade, MD

Administrative Leadtime *(in Months)*: 5 — Production Leadtime *(in Months)*: 4

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Mar 2019	Mar 2020	Mar 2021				
Delivery Dates	Jul 2019	Jul 2020	Jul 2021				

Installation Information

Method of Implementation: Installed:: Installation Name: Key Management (KM) - Ashore

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	6 / 0.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.150
FY 2019	- / -	1 / 0.025	66 / 1.350	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	67 / 1.375
FY 2020	- / -	- / -	50 / 1.250	1 / 0.025	0 / 0.000	1 / 0.025	- / -	- / -	- / -	- / -	0 / 0.000	51 / 1.275
FY 2021	- / -	- / -	- / -	36 / 0.900	0 / 0.000	36 / 0.900	17 / 0.425	- / -	- / -	- / -	0 / 0.000	53 / 1.325
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	16 / 0.400	- / -	- / -	- / -	0 / 0.000	16 / 0.400
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.075	4 / 0.100	- / -	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	20 / 0.500	10 / 0.250	0 / 0.000	30 / 0.750
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.175	42 / 0.000	49 / 0.175
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	7 / 0.175	116 / 2.600	37 / 0.925	0 / 0.000	37 / 0.925	33 / 0.825	3 / 0.075	24 / 0.600	17 / 0.425	Continuing	Continuing

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 5 / Key Management (KM) - Ashore (DA005)

ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)

Installation Information

Method of Implementation: Installed:: Installation Name: Key Management (KM) - Ashore

Installation Schedule

		FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025					
	PYS	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	4	3	16	18	18	64	1	-	-	36	6	6	5	16	-	-	-	3	2	2	-	20	3	2	5	7	Cont.	Cont.
Out	-	-	-	4	3	16	18	18	64	1	-	-	36	6	6	5	16	-	-	-	3	2	2	-	20	3	2	5	7	Cont.	Cont.

Method of Implementation (Organic): Simple Key Loader - Not Installed **Installation Quantity:** 0

Footnotes:

(24) 1.1.1) KMI Tech Refresh - NonOrganic: FY21 increase is the result of National Security Agency (NSA) mandated five-year refresh cycle. KMI Tech Refresh modernizes all KMI Spiral 2 systems.

(25) 1.1.2) Simple Key Loader (SKL) - Organic: FY21 increase aligns to the attrition rate caused by the seven-year battery life span. SKL procurements are required to replenish the fleet with key-fill devices required to conduct secure, mission-critical communications. Quantities fluctuate to remain within the Inventory Objective Capability (IOC).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 6 / SHARKCAGE - Afloat (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	3.083	11.610	38.841	33.725	0.000	33.725	35.699	36.413	31.037	32.669	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	3.083	11.610	38.841	33.725	0.000	33.725	35.699	36.413	31.037	32.669	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**3.083**	**11.610**	**38.841**	**33.725**	**0.000**	**33.725**	**35.699**	**36.413**	**31.037**	**32.669**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

SHARKCAGE is a global, federated Defensive Cyberspace Operations (DCO) enclave consisting of sensor nodes, DCO analysis workbenches, and analytic nodes. Utilizing one-way passive taps in a protected, isolated, classified environment, SHARKCAGE consolidates cyber event data from multiple platforms and networks, providing Navy DCO forces with a shared environment and common platform for integrated workflow, collaboration, and analysis. SHARKCAGE efficiently detects, correlates, and analyzes nation and non-nation state attacks against maritime data and the Naval Networking Environment (NNE).

SHARKCAGE afloat suites includes laptops, servers, switches, storage, network taps/cables, and forensic equipment to enable deployed DCO forces to conduct localized mobile analysis. Afloat suites also include hardware and software for enhanced data correlation tools, ancillary devices, and other related security tools.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 6 / SHARKCAGE - Afloat (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Ship, Sub	**Modification Type:** Initial	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SHARKCAGE - Afloat (DA070)												
B Kits												
Recurring												
1.1.1) SHARKCAGE Afloat Suite - NonOrganic (26)	4 / 1.000	16 / 4.000	53 / 13.250	46 / 11.500	- / -	46 / 11.500	49 / 12.250	50 / 12.500	43 / 10.750	45 / 11.250	Continuing	Continuing
Subtotal: Recurring	*- / 1.000*	*- / 4.000*	*- / 13.250*	*- / 11.500*	*- / -*	*- / 11.500*	*- / 12.250*	*- / 12.500*	*- / 10.750*	*- / 11.250*	*Continuing*	*Continuing*
Subtotal: SHARKCAGE - Afloat (DA070)	*4 / 1.000*	*16 / 4.000*	*53 / 13.250*	*46 / 11.500*	*- / -*	*46 / 11.500*	*49 / 12.250*	*50 / 12.500*	*43 / 10.750*	*45 / 11.250*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 1.000*	*- / 4.000*	*- / 13.250*	*- / 11.500*	*- / -*	*- / 11.500*	*- / 12.250*	*- / 12.500*	*- / 10.750*	*- / 11.250*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Train-the-Trainer	- / 0.150	- / 0.150	- / 0.150	- / 0.150	- / -	- / 0.150	- / 0.150	- / 0.150	- / 0.150	- / 0.150	Continuing	Continuing
2.2) Production Support	- / 0.050	- / 0.100	- / 0.372	- / 0.331	- / -	- / 0.331	- / 0.331	- / 0.360	- / 0.167	- / 0.225	Continuing	Continuing
2.3) DSA	- / 0.383	- / 1.440	- / 5.194	- / 4.494	- / -	- / 4.494	- / 4.593	- / 4.653	- / 3.845	- / 4.169	Continuing	Continuing
Subtotal: Support	*- / 0.583*	*- / 1.690*	*- / 5.716*	*- / 4.975*	*- / -*	*- / 4.975*	*- / 5.074*	*- / 5.163*	*- / 4.162*	*- / 4.544*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SHARKCAGE - Afloat (DA070)	- / 1.500	- / 5.920	- / 19.875	- / 17.250	- / 0.000	- / 17.250	- / 18.375	- / 18.750	- / 16.125	- / 16.875	Continuing	Continuing
Subtotal: Installation	*- / 1.500*	*- / 5.920*	*- / 19.875*	*- / 17.250*	*- / -*	*- / 17.250*	*- / 18.375*	*- / 18.750*	*- / 16.125*	*- / 16.875*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**3.083**	**11.610**	**38.841**	**33.725**	**0.000**	**33.725**	**35.699**	**36.413**	**31.037**	**32.669**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 6 / SHARKCAGE - Afloat (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SHARKCAGE - Afloat (DA070)

Manufacturer Information

Manufacturer Name: SHARKCAGE Equipment - Naval Information Warfare Center (NIWC) Pacific	Manufacturer Location: San Diego, CA
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 3

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	Mar 2019	Mar 2020	Mar 2021				

Installation Information

Method of Implementation: Installed:: Installation Name: SHARKCAGE - Afloat (DA070)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	4 / 1.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 1.500
FY 2019	- / -	16 / 5.920	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	16 / 5.920
FY 2020	- / -	- / -	53 / 19.875	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	53 / 19.875
FY 2021	- / -	- / -	- / -	46 / 17.250	0 / 0.000	46 / 17.250	- / -	- / -	- / -	- / -	0 / 0.000	46 / 17.250
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	49 / 18.375	- / -	- / -	- / -	0 / 0.000	49 / 18.375
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	50 / 18.750	- / -	- / -	0 / 0.000	50 / 18.750
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	43 / 16.125	- / -	0 / 0.000	43 / 16.125
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	45 / 16.875	0 / 0.000	45 / 16.875
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	4 / 1.500	16 / 5.920	53 / 19.875	46 / 17.250	0 / 0.000	46 / 17.250	49 / 18.375	50 / 18.750	43 / 16.125	45 / 16.875	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	4	-	9	5	2	-	23	20	10	-	12	21	13	-	24	9	16	-	29	12	9	-	15	15	13	-	15	15	15	Cont.	Cont.
Out	4	-	9	4	3	-	18	22	13	-	4	21	21	-	20	8	21	-	29	7	14	-	15	15	13	-	15	15	15	Cont.	Cont.

Footnotes:

(26) 1.SHARKCAGE Afloat Suite - FY21 decrease is driven by the reduction in requirement to field SHARKCAGE Afloat Suites on various platforms

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 7 / SHARKCAGE - Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	9.136	15.158	11.187	15.116	0.000	15.116	4.805	9.069	15.237	11.530	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	9.136	15.158	11.187	15.116	0.000	15.116	4.805	9.069	15.237	11.530	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**9.136**	**15.158**	**11.187**	**15.116**	**0.000**	**15.116**	**4.805**	**9.069**	**15.237**	**11.530**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

SHARKCAGE ashore suites represent multiple SHARKCAGE architectures and variants that are specifically designed to each site in accordance with Fleet and Defensive Cyber Operations (DCO) requirements based on emergent threats in the tactical environment. Capabilities provided include network tapping, sensing, and analytic toolsets for passively monitoring multiple Navy networks to detect and assess cyber threats across multiple security enclaves. Ashore sites include Navy Cyber Defense Operations Command (NCDOC), Navy Information Operations Commands (NIOC), Fleet Cyber Command/Commander Tenth Fleet (FCC/C10F), Nuclear Command, Control, and Communications, Navy (NC3-N), Ballistic Missile Defense (BMD) (i.e., Aegis Ashore), and SHARKCAGE production labs, as well as other network concentration facilities.

SHARKCAGE procures equipment to include: hardware, software, servers, data storage, taps, switches, laptops, and ancillary systems that provide the following capabilities: passive network sensor nodes that collect live network traffic and use signature-based and heuristic Intrusion Detection Systems (IDS) to conduct initial analysis and alerting; analytic nodes which consist primarily of systems supporting ingest, storage, retention, retrieval, correlation, and real-time alerting of network traffic Packet Capture (PCAP) and event data; and analysis workbenches which provide an environment of tools for DCO analysts to support all aspects of the DCO mission, local to DCO forces at FCC/C10F, NCDOC, NIOC, Naval Computer and Telecommunications Stations (NCTS), and Naval Computer and Telecommunications Area Master Stations (NCTAMS).

SHARKCAGE NCDOC Suite is the primary ashore site that supports the entire Navy enterprise and provides the capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities.

SHARKCAGE Analytic Suite provides a regional/Area of Responsibility (AoR) capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities.

SHARKCAGE Sensor Suite provide operators with the ability to conduct data ingest, data storage, data retention, data retrieval, data correlation, and real-time alerting of event-based data to support the DCO mission.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 7 / SHARKCAGE - Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Shore	**Modification Type:** Various	**Related RDT&E PEs:** 0303140N

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Procurement												
Modification Item 1 of 1: SHARKCAGE - Ashore (DA070)												
B Kits												
Recurring												
1.1.1) SHARKCAGE NCDOC Suite - NonOrganic	1 / 7.200	- / -	- / -	- / -	- / -	- / -	- / -	1 / 7.200	- / -	- / -	Continuing	Continuing
1.1.2) SHARKCAGE Analytic Suite - NonOrganic [27]	- / -	2 / 9.600	1 / 4.800	2 / 9.600	- / -	2 / 9.600	- / -	- / -	2 / 9.600	1 / 4.800	Continuing	Continuing
1.1.3) SHARKCAGE Sensor Suite - NonOrganic [28]	1 / 0.325	5 / 1.625	7 / 2.275	5 / 1.625	- / -	5 / 1.625	6 / 1.950	1 / 0.325	5 / 1.625	7 / 2.275	Continuing	Continuing
Subtotal: Recurring	*- / 7.525*	*- / 11.225*	*- / 7.075*	*- / 11.225*	*- / -*	*- / 11.225*	*- / 1.950*	*- / 7.525*	*- / 11.225*	*- / 7.075*	*Continuing*	*Continuing*
Subtotal: SHARKCAGE - Ashore (DA070)	*2 / 7.525*	*7 / 11.225*	*8 / 7.075*	*7 / 11.225*	*- / -*	*7 / 11.225*	*6 / 1.950*	*2 / 7.525*	*7 / 11.225*	*8 / 7.075*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 7.525*	*- / 11.225*	*- / 7.075*	*- / 11.225*	*- / -*	*- / 11.225*	*- / 1.950*	*- / 7.525*	*- / 11.225*	*- / 7.075*	*Continuing*	*Continuing*
Support *(All Modification Items)*												
2.1) Train-the-Trainer	- / 0.150	- / 0.150	- / 0.150	- / 0.150	- / -	- / 0.150	- / 0.150	- / 0.150	- / 0.150	- / 0.150	Continuing	Continuing
2.2) Production Support	- / 0.370	- / 0.307	- / 0.169	- / 0.354	- / -	- / 0.354	- / 0.101	- / 0.193	- / 0.386	- / 0.360	- / -	- / 2.240
2.3) DSA	- / 0.216	- / 0.661	- / 0.775	- / 0.677	- / -	- / 0.677	- / 0.504	- / 0.326	- / 0.661	- / 0.800	Continuing	Continuing
Subtotal: Support	*- / 0.736*	*- / 1.118*	*- / 1.094*	*- / 1.181*	*- / -*	*- / 1.181*	*- / 0.755*	*- / 0.669*	*- / 1.197*	*- / 1.310*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: SHARKCAGE - Ashore (DA070)	- / 0.875	- / 2.815	- / 3.018	- / 2.710	- / 0.000	- / 2.710	- / 2.100	- / 0.875	- / 2.815	- / 3.145	Continuing	Continuing
Subtotal: Installation	*- / 0.875*	*- / 2.815*	*- / 3.018*	*- / 2.710*	*- / -*	*- / 2.710*	*- / 2.100*	*- / 0.875*	*- / 2.815*	*- / 3.145*	*Continuing*	*Continuing*
Total												
Total Cost (Procurement + Support + Installation)	**9.136**	**15.158**	**11.187**	**15.116**	**0.000**	**15.116**	**4.805**	**9.069**	**15.237**	**11.530**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3415 / Info Systems Security Program (ISSP)	**Modification Number / Title:** 7 / SHARKCAGE - Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: SHARKCAGE - Ashore (DA070)

Manufacturer Information

Manufacturer Name: SHARKCAGE Equipment - Naval Information Warfare Center (NIWC) Pacific	Manufacturer Location: San Diego, CA
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 3

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2018	Dec 2019	Dec 2020				
Delivery Dates	Mar 2019	Mar 2020	Mar 2021				

Installation Information

Method of Implementation: Installed:: Installation Name: SHARKCAGE - Ashore (DA070)

Installation Cost	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 0.875	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.875
FY 2019	- / -	7 / 2.815	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 2.815
FY 2020	- / -	- / -	8 / 3.018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 3.018
FY 2021	- / -	- / -	- / -	7 / 2.710	0 / 0.000	7 / 2.710	- / -	- / -	- / -	- / -	0 / 0.000	7 / 2.710
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.100	- / -	- / -	- / -	0 / 0.000	6 / 2.100
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.875	- / -	- / -	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 2.815	- / -	0 / 0.000	7 / 2.815
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 3.145	0 / 0.000	8 / 3.145
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	2 / 0.875	7 / 2.815	8 / 3.018	7 / 2.710	0 / 0.000	7 / 2.710	6 / 2.100	2 / 0.875	7 / 2.815	8 / 3.145	Continuing	Continuing

Installation Schedule

	PYS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	7	-	-	-	8	-	-	-	7	-	-	-	6	-	-	-	2	-	-	-	7	-	-	-	8	-	-	Cont.	Cont.
Out	2	-	7	-	-	-	8	-	-	-	7	-	-	-	6	-	-	-	2	-	-	-	7	-	-	-	8	-	-	Cont.	Cont.

Footnotes:

(27) 1.1.2) SHARKCAGE Analytic Suite - NonOrganic: FY21 increase is in accordance with fielding plan and regional/AOR capability. Analytic Suites provide a regional/AOR capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities.

(28) 1.1.3) SHARKCAGE Sensor Suite - NonOrganic: FY21 decrease is in accordance with fielding plan and regional/AOR capability. Sensor Suites provide a regional/AOR capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment	**P-1 Line Item Number / Title:** 3417 / MIO Intel Exploitation Team

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	4.327	0.988	0.968	0.985	0.000	0.985	1.004	1.024	1.045	1.066	-	11.407
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	4.327	0.988	0.968	0.985	0.000	0.985	1.004	1.024	1.045	1.066	-	11.407
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**4.327**	**0.988**	**0.968**	**0.985**	**0.000**	**0.985**	**1.004**	**1.024**	**1.045**	**1.066**	**-**	**11.407**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P40A / 343SA - Maritime Interdiction Operations Intel Exploitation Team]: Tactical Electronic Warfare (EW) equipment is used in support of indications, warning, and force protection. Tactical EW systems provide the capability to collect data in both digital and analogue Radio Frequency (RF) environments. Specific collection capabilities include digital and analogue data collection with wireless signal exploitations; Specific Emitter Identification (SEI), which discerns unique attributes of specific radar; Satellite Communication capability; Wireless networks to conduct surveys, to include telecom network mapping and geolocation; and Document and Media Exploitation allowing capture of media from electronic devices.

[P40A / 343SA - Wireless Networks Mapping Equipment / Surveys]: New equipment in this category approved to Table of Allowance in FY2019. Funding procures four (4) geolocation wireless collection devices for signal collection and location determination in FY19.

[P40A / 343SA - Specific Emitter Identification Devices]: Funding will procure six (6) emitter devices to track radio signals in FY20.

[P40A / 343SA - Digital / Analog Collection Devices]: Funding will procure approximately four (4) to six (6) digital/analog radios and/or multi-radios in FY21. Execution cost per kit is dependent on future cost inflation and vendor.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment	**P-1 Line Item Number / Title:** 3417 / MIO Intel Exploitation Team

ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	MIO Intel Exploitation Team	P-5a			- / 4.327	- / 0.988	- / 0.968	- / 0.984	- / -	- / 0.984
P-40	**Total Gross/Weapon System Cost**				**- / 4.327**	**- / 0.988**	**- / 0.968**	**- / 0.985**	**- / 0.000**	**- / 0.985**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The FY21 funding request supports the procurement of six (6) ruggedized multi-radio(s) that facilitate the transmission and collection of information by Intelligence Exploitation Teams, usually through electronic audio or video signals. Multi-radios, recently added to Table of Allowance in 2019, provide essential capability to capture and locate signal sources and exploit wireless signals in expeditionary and urban missions. Technology updates frequently during any given year and Table of Allowance requirements are reviewed and updated accordingly.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3417 / MIO Intel Exploitation Team	**Aggregated Items Title:** MIO Intel Exploitation Team

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
1) 343SA - Maritime Interdiction Operations Intel Exploitation Team																				
1.1) 343SA - Satellite Communications Equipment	A		0.307	3	0.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) 343SA - Wireless Networks Mapping Equipment / Surveys(†)	A		-	-	-	0.247	4	0.988	-	-	-	-	-	-	-	-	-	-	-	-
1.3) 343SA - Wireless Networks Telcom Equipment	A		0.151	3	0.453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) 343SA - Specific Emitter Identification Devices(†)	A		0.341	3	1.024	-	-	-	0.161	6	0.968	-	-	-	-	-	-	-	-	-
1.5) 343SA - Digital / Analog Collection Devices (1)(†)	A		0.240	4	0.961	-	-	-	-	-	-	0.246	4	0.984	-	-	-	0.246	4	0.984
1.6) DRT 1301C+/ TRS V7 Wireless Receiving System	A		0.875	1	0.875	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7) LANSHARK 5	A		0.094	1	0.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) 343SA - Maritime Interdiction Operations Intel Exploitation Team			**-**	**-**	***4.327***	**-**	**-**	***0.988***	**-**	**-**	***0.968***	**-**	**-**	***0.984***	**-**	**-**	**-**	**-**	**-**	***0.984***
Total			**-**	**-**	**4.327**	**-**	**-**	**0.988**	**-**	**-**	**0.968**	**-**	**-**	**0.984**	**-**	**-**	**-**	**-**	**-**	**0.984**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) Horizontal dollar value differences reflect inflation.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	**P-1 Line Item Number / Title:** 3417 / MIO Intel Exploitation Team	**Aggregated Items:** MIO Intel Exploitation Team

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty *(Each)*	Unit Cost *($ M)*	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) 343SA - Maritime Interdiction Operations Intel Exploitation Team												
1.2) 343SA - Wireless Networks Mapping Equipment / Surveys		2019 (2)	Sharkcage / Philidelphia	MIPR	** NO PCO **	Apr 2019	Apr 2019	4	0.247	N	Sep 2019	Apr 2019
1.4) 343SA - Specific Emitter Identification Devices		2020	Government off the shelf / Various	MIPR	** NO PCO **	Mar 2020	Mar 2020	6	0.161	N	Sep 2020	
1.5) 343SA - Digital / Analog Collection Devices (1)		2021	Digital Receiver Technology / Germantown, MD	C / TBD	** NO PCO **	May 2021	May 2021	4	0.246	N		

Footnotes:

(2) Additional unit will be procured in JAN 2020.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	118.896	31.994	13.090	15.906	0.000	15.906	18.405	18.562	18.942	19.322	-	255.117
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	118.896	31.994	13.090	15.906	0.000	15.906	18.405	18.562	18.942	19.322	-	255.117
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**118.896**	**31.994**	**13.090**	**15.906**	**0.000**	**15.906**	**18.405**	**18.562**	**18.942**	**19.322**	**-**	**255.117**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P5 / 1V045 Access Systems & Subsystems]: Cryptologic Carry-On Equipment: The Cryptologic Carry-On-Program (CCOP) procures state-of-the-art, commercial off-the-shelf Signals Intelligence (SIGINT) equipment (hardware and software) in response to combatant commander requirements for a quick-reaction surface, subsurface, and airborne cryptologic carry-on capability. The equipment is procured in accordance with requirements detailed in the shipboard Information Warfare / Cryptologic System Operational Requirements Document and specific execution year fleet requirements. These requirements are defined by the Signals of Interest (SOI) Integrated Product Team (IPT), in concert with Shipboard Signals Exploitation Space (SSES) programs (includes Ship's Signal Exploitation Equipment Family of Systems) to ensure synergy and seamless transition to permanently installed systems. The IPT meets to determine which SOIs/Targets on the SOI list need to be addressed. Due to a continually changing threat environment, detailed requirements are dynamic and equipment procured varies each year by quantity and type. Equipment suites can be configured for many targets and tasking. Target specific subsystems can either operate as stand-alone within the cryptologic spaces or as an add-on to existing equipment. Hardware procurements includes: receivers, recorders, tactical computers and related peripherals, antennas, electronic-warfare support measures systems, precision geolocation equipment, advanced signal and search equipment including spectrum analyzers and associated portable special intelligence communications equipment. CCOP equipment is installed as an augment to cryptologic capabilities on subsurface, surface, and air platforms. There are approximately 124 cryptologic capable surface ships and shore sites in the current Navy inventory. Each of these are potential users of this carry-on equipment, as are subsurface and air platforms. The temporary installation of equipment is coordinated through fleet electronic support personnel. A primary system in inventory is the Carry On Radio Spectrum Analysis & Intelligence Reporting (CORSAIR) system. Funds continue to procure CORSAIR core architecture system upgrades to provide additional affordable functionality to the combatant commands. Additional signal acquisition equipment to address specific combatant command requirements include such systems as Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE / TURBULENTWIND / TURBULENTSAIL / BLUESTREAM servers, RED FALCON, FIREFLY, TEASTAR, Generic Area Limitations Environment (GALE)-Lite, and OWN FORCE MONITORING equipment. This line also supports the procurement of STALLION hardware for CCOP team training.

[P5 / [USFFC ID] GDX6D - Global Signal Analysis Equipment]: Funds for Global Signals Analysis Laboratory (GSAL) program supports procurement to facilitate the data handling subsystem accredited by National Security Agency (NSA). The GSAL program, under project name CLASSIC SENSEI, provides for the timely analysis of data derived from maritime Information Warfare (IW) operations. This architecture known as LABLINK provides advanced manipulation, forwarding, and exchanges of data while providing connectivity with collaborating military, national, and international partners throughout the intelligence community. Signals Analysis Laboratories (SAL) are co-located with Fleet Information Operations Centers (FIOC) and other Fleet concentrations areas to perform high priority theater-level analysis and processing. The GSAL program office equips the eight (8) SAL's with advanced signals analysis capabilities in order to accomplish the in-depth signals analysis that is required to effectively address processing and exploitation requirements in support of both maritime tactical and national strategic IW objectives. Funding sustains SAL integration for security and new technology requirements to facilitate highly technical analysis in a highly diverse, constantly changing, and contested electromagnetic environment. SALs are integral components of the Tech Signal Intelligence (SIGINT) Revitalization initiatives that provide a collaborative enterprise. Global Signal Analysis Equipment (GSAL) quantity is based on updating one (1) of eight (8) signals analysis labs and are not representative of any single systems or end items.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P5 / [USFFC ID] Global Signal Analysis Laboratory (GSAL)]: Funds for Global Signals Analysis Laboratory (GSAL) program supports procurement to facilitate the data handling subsystem accredited by National Security Agency (NSA). The GSAL program, under project name CLASSIC SENSEI, provides for the timely analysis of data derived from maritime Information Warfare (IW) operations. This architecture known as LABLINK provides advanced manipulation, forwarding, and exchanges of data while providing connectivity with collaborating military, national, and international partners throughout the intelligence community. Signals Analysis Laboratories (SAL) are co-located with Fleet Information Operations Centers (FIOC) and other Fleet concentrations areas to perform high priority theater-level analysis and processing. The GSAL program office equips the eight (8) SAL's with advanced signals analysis capabilities in order to accomplish the in-depth signals analysis that is required to effectively address processing and exploitation requirements in support of both maritime tactical and national strategic IW objectives. Funding sustains SAL integration for security and new technology requirements to facilitate highly technical analysis in a highly diverse, constantly changing, and contested electromagnetic environment. SALs are integral components of the Tech Signal Intelligence (SIGINT) Revitalization initiatives that provide a collaborative enterprise. FY21 funding provided for Global Signal Analysis Equipment (GSAL) quantity is based on updating one (1) of eight (8) signals analysis labs and are not representative of any single systems or end items.

[P5 / [USFFC ID] GDX6D - System Integration and Installation of Hardware]: This effort upgraded the Navy Tactical Data Network hardware at the Unified Atlantic Region Network Operations Center. The hardware upgrade will enable additional ships (up to 40+) to connect to the Fleet Data Distribution Server. Additionally, this effort provided with two fundamental capabilities that allow for rapid response to emergent threats:
1) Capability to quickly and remotely (from shore or ship) re-task collection systems based on mission and operational area
2) Capability to get the collected data products to shore facilities for analysis by the Intelligence Community in real time, advancing the capabilities of systems like SSEE Inc. F and CCOP's CORSAIR systems.

The Navy Information Warfare Center Pacific (NIWC-PAC) has a critical role by installing, configuring, and maintaining servers like Fleet Data Distribution System (FDDS), Navy Data Distribution System (NDDS), PLUTO and SAND and real time collection systems such as BLUESTREAM on both JWICS and NSANet.

The effort keeps NIWC at the forefront of leveraging emerging infrastructure like MACHINESHOP and Amazon Commercial Cloud Service (C2S). These servers provide critical infrastructure without the use of multiple hardware chassis, push/pull the collection data off a collection systems and route that data to the Intelligence Community (IC) where the data can be analyzed while the ship that collected the information is still deployed.

The DSO effort will be critical going forward as we maintain our current efforts as well as develop future systems such as NTDN 2.0 and the all-encompassing CRC DASHBOARD.

[P5 / [USFFC ID] System Integration & Installation of Hardware (FIOC)]: Funds are required for purchasing and maintaining life cycle support for command and control systems connected to Sensitive Compartmented Information (SCI) networks as well as to develop and maintain a common baseline of analytical intelligence software tools. This capability directly supports Fleet Information Operations Centers (FIOCs) areas as defined in the operational strategy (OPSTRAT). Each FIOC, who is co-located with National Security Agency (NSA) Cryptologic Centers, is charged with providing regionally focused Information Operation (IO) and Signal Intelligence (SIGINT) support to Fleet Commanders.

[P5 / [USFFC ID] EW Fleet Synthethic Trainer Consolidation]: Fleet Synthetic Training (FST) Signals Intelligence (SIGINT) / Counter Intelligence Surveillance and Reconnaissance (C-ISR) initiative addresses the lack of realistic SIGINT / C-ISR during exercises supporting the Fleet Training Continuum (FTC). Addresses critical requirements for SIGINT and C-ISR in Fleet Synthetic Training (FST) required in preparing Intelligence personnel/teams for forward deployed operations. This effort provides the ability to exercise shipboard Top Secret/Sensitive Compartmented Information (TS/SCI) capabilities in an environment not subject to counter-detection. Improves staff operational planning and tactical decision making combined with improvements to overall Intelligence team readiness and certification throughout the Optimized-Fleet Response Plan (O-FRP). Supports assured Command/Control (C2) and Cyber Situational Awareness/Cyber Defense and Enhanced Naval Network Environment (NNE) Information Dominance Integrated Process Capabilities Lists (IPCLs). Builds upon General Services (GENSER) Navy Continuous Training Environment (NCTE) to expand the existing GENSER NCTE with above GENSER capabilities to include TS-SCI FST architecture/capabilities. Provides for architecture, capabilities and scenario build-out as well as required life-cycle management. This capability will enhance individual units and Strike Groups in exercising integrated kinetic and non-kinetic capabilities, to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in Electromagnetic Maneuver Warfare (EMW).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P5 / [USFFC ID] EW Fleet Synthethic Trainer Consolidation]: Fleet Synthetic Training (FST) Signals Intelligence (SIGINT) / Counter Intelligence Surveillance and Reconnaissance (C-ISR) initiative addresses the lack of realistic SIGINT / C-ISR during exercises supporting the Fleet Training Continuum (FTC). Addresses critical requirements for SIGINT and C-ISR in Fleet Synthetic Training (FST) required in preparing Intelligence personnel/teams for forward deployed operations. This effort provides the ability to exercise shipboard Top Secret/Sensitive Compartmented Information (TS/SCI) capabilities in an environment not subject to counter-detection. Improves staff operational planning and tactical decision making combined with improvements to overall Intelligence team readiness and certification throughout the Optimized-Fleet Response Plan (O-FRP). Supports assured Command/Control (C2) and Cyber Situational Awareness/Cyber Defense and Enhanced Naval Network Environment (NNE) Information Dominance Integrated Process Capabilities Lists (IPCLs). Builds upon General Services (GENSER) Navy Continuous Training Environment (NCTE) to expand the existing GENSER NCTE with above GENSER capabilities to include TS-SCI FST architecture/capabilities. Provides for architecture, capabilities and scenario build-out as well as required life-cycle management. This capability will enhance individual units and Strike Groups in exercising integrated kinetic and non-kinetic capabilities, to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in Electromagnetic Maneuver Warfare (EMW).

[P5 / [USFFC N7] Fleet Synthetic Training (FST) SIGINT / C-ISR]: Fleet Synthetic Training (FST) Signals Intelligence (SIGINT)/Counter Intelligence, Surveillance, and Reconnaissance (C-ISR) initiative addresses the lack of realistic SIGINT/C-ISR during exercises supporting the Fleet Training Continuum (FTC). This effort provides the capability to exercise shipboard Top Secret Sensitive Compartmented Information (TS SCI) capabilities by expanding upon General Service (GENSER) Navy Continuous Training Environment (NCTE) capabilities to add above GENSER architecture/capabilities. Provides architecture, systems and required life cycle management to improve staff operational planning and tactical decision making, and overall intelligence team readiness and certification throughout the Optimized Fleet Response Plan (O FRP). This capability will enhance individual units and strike groups in exercising integrated kinetic and non kinetic capabilities to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in SIGINT, Electromagnetic Maneuver Warfare (EMW), and cyberspace operations. Addresses critical requirements for SIGINT and C-ISR in FST required in preparing Intelligence personnel/teams for forward deployed operations. Provides systems with the ability to exercise shipboard TS SCI capabilities in an environment not subject to counter detection. Improves staff operational planning and tactical decision making and overall Intelligence team readiness and certification throughout the O FRP and supports Assured Command and Control (C2) and Cyber Situational Awareness/Cyber Defense and Enhanced Naval Network Environment (NNE) Information Dominance Integrated Prioritized Capabilities Lists (IPCLs).

[P5 / [USFFC N7] Tier 1 TS/SCI NCTE & VOIP Procurement & Installation]: Funds for procurement of a Tier 1 Top Secret/Sensitive Compartmented Information (TS/SCI) Navy Continuous Training Environment (NCTE) node. No node was procured in FY20. Funding will also procure two (2) Voice Over Internet Protocol (VOIP) systems. No VOIPs were procured in FY20.

[P5 / [USFFC N7] Tier 1 Life Cycle Management (LCM)]: Funding for life cycle technical refresh for node equipment. Life Cycle technical refresh must be completed at least once every three (3) years for the life of the node.

[P5 / [USFFC N7] SIGINT / C-ISR Systems - Permanent Shipboard Installation]: Funding in support of permanent shipboard installations that provide capability for comprehensive maritime operations and operational proficiency in Signals Intelligence (SIGINT), Electromagnetic Maneuver Warfare (EMW), and cyberspace operations. FY21 funding allows for 19 permanent shipboard installations.

[P5 / [USFFC N7] SIGINT / C-ISR Systems - Life Cycle Management (LCM)]: Funds provide life cycle maintenance and support for shipboard installed equipment/systems. Unit cost reduction achieved through economies of scale and comparisons with technical refresh efforts for other systems.

[P5 / [USFFC N7] Fleet Training Wholeness (FTW)]: Funding for installation support for 19 permanent shipboards systems, technical refresh of 42 interim capability Portable Embarkation Kits (PEKs) on ships awaiting permanent equipment installation, and fluctuations in the locations of those installations (i.e., increased travel requirement/costs for overseas locations (e.g., Spain, Japan).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)	Quantity / Total Cost (Each) / ($ M)
P-5	1 / Cryptologic Communications Equip	P-5a, P-21			- / 118.896	- / 31.994	- / 13.090	- / 15.906	- / 0.000	- / 15.906
P-40	**Total Gross/Weapon System Cost**				**- / 118.896**	**- / 31.994**	**- / 13.090**	**- / 15.906**	**- / 0.000**	**- / 15.906**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY21 funds will continue to satisfy signals exploitation capability gaps as determined by the Cryptologic Carry-on Program (CCOP) Signals of Interest (SOI) Integrated Product Team (IPT) and Fleet Signals Development Working Group (FSDWG) and provide supplemental capability to host Signals Intelligence systems. Recommended procurements best suited to address identified gaps include: Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE / TURBULENTWIND / TURBULENTSAIL, BLUESTREAM servers, RED FALCON, TEAPARTY/TEALEAF, and Generic Area Limitations Environment (GALE)-Lite, OWN FORCE MONITORING equipment, Carry On Radio Spectrum Analysis & Intelligence Reporting (CORSAIR), as well as Adaptive Mission Packages.

FY21 increase ($0.553K) to the Cryptologic Carry-on Program (CCOP) is due to an additional procurement (39 in total in FY21 as compared to 38 in FY20) and associated production support costs. FY21 funds will continue to satisfy signals exploitation capability gaps as determined by the CCOP Signals of Interest (SOI) Integrated Product Team (IPT) and Fleet Signals Development Working Group (FSDWG) and provide supplemental capability to host Signals Intelligence systems. Recommended procurements best suited to address identified gaps include: Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE / TURBULENTWIND / TURBULENTSAIL, BLUESTREAM servers, RED FALCON, TEAPARTY/TEALEAF, and Generic Area Limitations Environment (GALE)-Lite, OWN FORCE MONITORING equipment, Carry On Radio Spectrum Analysis & Intelligence Reporting (CORSAIR), as well as Adaptive Mission Packages.

FY21 Global Signal Analysis Laboratory (GSAL) decrease ($0.006M) due to current market cost of procure equipment items. Funding sustains Signals Analysis Laboratories (SAL) integration for security and new technology requirements that facilitate technical analysis in diverse and contested electromagnetic environments. SALs are integral components of the Tech Signal Intelligence (SIGINT) Revitalization initiatives.

FY21 System Integration & Installation of Hardware (FIOC) decrease ($0.015M) due to current market price for maintaining life cycle support for command and control systems connected to Sensitive Compartmented Information (SCI) networks. Funds also utilized to develop and maintain a common baseline of analytical intelligence software tools, commercial software licenses and locality of FIOCs.

FY21 EW Fleet Synthetic Trainer Consolidation increase ($0.403M) due to further development into Stallion Signal Intelligence scenarios at Center for Information Dominance Cryptologic "C" and "F" schools, as well as the continuum of Navy Continuous Training Environment (NCTE) Fleet Synthetic Training (FST) events. This funding further supports continued Stallion tool development, regression testing, accreditation documentation, and system engineering support at Naval Information Forces Command.

FY21 Tier 1 TS/SCI NCTE & VOIP Procurement & Installation increase ($1.020M) due to procurement of a Tier 1 Top Secret(TS)/SCI NCTE node and two (2) Voice Over Internet Protocol (VOIP) systems.

FY21 Tier 1 Life Cycle Management (LCM) increase ($0.069M) due to increased life cycle technical refresh cost for node equipment. Life cycle technical refresh must be completed every three (3) years for the life of the node.

FY21 SIGINT / Counter Intelligence, Surveillance, and Reconnaissance (C-ISR) Systems - Permanent Shipboard Installation increase ($0.114M) due increase in shipboard installations that provide capability for comprehensive maritime operations and operational proficiency in SIGINT, Electromagnetic Maneuver Warfare (EMW), and cyberspace operations.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

FY21 SIGINT / C-ISR Systems - Life Cycle Management (LCM) increase ($0.003M) due to unit cost. As the number of shipboard installations increase, the life cycle maintenance cost per unit is decreasing due to increased volume discount pricing.

FY21 Fleet Training Wholeness (FTW) increase ($0.675M) due to increase in installation support for permanent shipboards systems, technical refresh of interim capability Portable Embarkation Kits (PEKs), and fluctuations in the locations of installations.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	**Item Number / Title [DODIC]:** 1 / Cryptologic Communications Equip
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	118.896	31.994	13.090	15.906	0.000	15.906
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	118.896	31.994	13.090	15.906	0.000	15.906
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**118.896**	**31.994**	**13.090**	**15.906**	**0.000**	**15.906**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Thousands)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Hardware - 1V045 Access Systems & Subsystems Cost																		
Recurring Cost																		
1.1.1) CCOP Systems & Subsystems(†) (1)	261.008	399	104.142	232.057	123	28.543	242.450	38	9.213	248.872	39	9.706	-	-	-	248.872	39	9.706
Subtotal: Recurring Cost	-	-	*104.142*	-	-	*28.543*	-	-	*9.213*	-	-	*9.706*	-	-	-	-	-	*9.706*
Subtotal: Hardware - 1V045 Access Systems & Subsystems Cost	**-**	**-**	***104.142***	**-**	**-**	***28.543***	**-**	**-**	***9.213***	**-**	**-**	***9.706***	**-**	**-**	**-**	**-**	**-**	***9.706***
Hardware - [USFFC ID] GDX6D - Global Signal Analysis Equipment Cost																		
Recurring Cost																		
2.1.1) [USFFC ID] Global Signal Analysis Laboratory (GSAL)(†) (2)	1,489.200	5	7.446	771.000	1	0.771	784.000	1	0.784	778.000	1	0.778	-	-	-	778.000	1	0.778
Subtotal: Recurring Cost	-	-	*7.446*	-	-	*0.771*	-	-	*0.784*	-	-	*0.778*	-	-	-	-	-	*0.778*
Subtotal: Hardware - [USFFC ID] GDX6D - Global Signal Analysis Equipment Cost	**-**	**-**	***7.446***	**-**	**-**	***0.771***	**-**	**-**	***0.784***	**-**	**-**	***0.778***	**-**	**-**	**-**	**-**	**-**	***0.778***
Hardware - [USFFC ID] GDX6D - System Integration and Installation of Hardware Cost																		
Recurring Cost																		
3.1.1) [USFFC ID] System Integration & Installation of Hardware (FIOC)(†) (3)	705.500	2	1.411	700.000	1	0.700	721.000	1	0.721	706.000	1	0.706	-	-	-	706.000	1	0.706

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip	Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Recurring Cost	-	-	*1.411*	-	-	*0.700*	-	-	*0.721*	-	-	*0.706*	-	-	-	-	-	*0.706*
Subtotal: Hardware - [USFFC ID] GDX6D - System Integration and Installation of Hardware Cost	**-**	**-**	***1.411***	**-**	**-**	***0.700***	**-**	**-**	***0.721***	**-**	**-**	***0.706***	**-**	**-**	**-**	**-**	**-**	***0.706***
Hardware - [USFFC ID] EW Fleet Synthethic Trainer Consolidation Cost																		
Recurring Cost																		
4.1.1) [USFFC ID] EW Fleet Synthethic Trainer Consolidation(†) (4)	153.000	1	0.153	-	-	-	159.000	1	0.159	562.000	1	0.562	-	-	-	562.000	1	0.562
Subtotal: Recurring Cost	-	-	*0.153*	-	-	-	-	-	*0.159*	-	-	*0.562*	-	-	-	-	-	*0.562*
Subtotal: Hardware - [USFFC ID] EW Fleet Synthethic Trainer Consolidation Cost	**-**	**-**	***0.153***	**-**	**-**	**-**	**-**	**-**	***0.159***	**-**	**-**	***0.562***	**-**	**-**	**-**	**-**	**-**	***0.562***
Hardware - [USFFC N7] Fleet Synthetic Training (FST) SIGINT / C-ISR Cost																		
Recurring Cost																		
5.1.1) [USFFC N7] Tier 1 TS/SCI NCTE & VOIP Procurement & Installation(†) (5)	396.000	1	0.396	456.000	1	0.456	-	-	-	1,020.000	1	1.020	-	-	-	1,020.000	1	1.020
5.1.2) [USFFC N7] Tier 1 Life Cycle Management (LCM)(†) (6)	159.000	1	0.159	226.000	1	0.226	225.000	1	0.225	294.000	1	0.294	-	-	-	294.000	1	0.294
5.1.3) [USFFC N7] SIGINT / C-ISR Systems - Permanent Shipboard Installation(†) (7)	-	-	-	-	-	-	52.941	17	0.900	53.370	19	1.014	-	-	-	53.370	19	1.014
5.1.4) [USFFC N7] SIGINT / C-ISR Systems - Life Cycle Management (LCM)(†) (8)	-	-	-	-	-	-	7.780	17	0.132	5.000	27	0.135	-	-	-	5.000	27	0.135
5.1.5) [USFFC N7] Fleet Training Wholeness (FTW)(†) (9)	-	-	-	700.000	1	0.700	659.000	1	0.659	1,334.000	1	1.334	-	-	-	1,334.000	1	1.334
Subtotal: Recurring Cost	-	-	*0.555*	-	-	*1.382*	-	-	*1.916*	-	-	*3.797*	-	-	-	-	-	*3.797*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip	Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
Subtotal: Hardware - [USFFC N7] Fleet Synthetic Training (FST) SIGINT / C-ISR Cost	-	-	0.555	-	-	1.382	-	-	1.916	-	-	3.797	-	-	-	-	-	3.797
Support - 1V555 Production Support Cost																		
6.1) Production Support	-	-	5.189	-	-	0.598	-	-	0.297	-	-	0.357	-	-	-	-	-	0.357
Subtotal: Support - 1V555 Production Support Cost	-	-	5.189	-	-	0.598	-	-	0.297	-	-	0.357	-	-	-	-	-	0.357
Gross/Weapon System Cost	-	-	118.896	-	-	31.994	-	-	13.090	-	-	15.906	-	-	0.000	-	-	15.906

Remarks:
[Hardware] FY20 to FY21 decrease is due to amount of commercial software licenses and locality of Fleet Information Operations Centers (FIOCs).

(†) indicates the presence of a P-5a

Footnotes:
(1) Cryptologic Carry-on Program (CCOP) systems unit cost increases from FY20 to FY21 due to an increase in fleet capability requirements of CCOP systems and subsystems.
(2) FY21 decrease due to current market cost of procure equipment items.
(3) FY21 decrease due to amount of commercial software licenses and locality of Fleet Information Operations Centers (FIOCs).
(4) FY21 increase due to further development into Stallion Signal Intelligence and Navy Continuous Training Environment (NCTE) Fleet Synthetic Training (FST) events.
(5) FY21 increase due to procurement of a Tier 1 Top Secret/Sensitive Compartmented Information (TS/SCI) Navy Continuous Training Environment (NCTE) node and two (2) Voice Over Internet Protocol (VOIP) systems. No node or VOIP systems were procured in FY20.
(6) FY21 increase due to increased life cycle technical refresh cost for node equipment.
(7) FY21 increase due increase in shipboard installations.
(8) Unit cost decreasing while total cost increasing is due to realizing cost advantages of economy of scale. As the number of shipboard installations increase, the life cycle maintenance cost per unit is decreasing due to increased volume discount pricing.
(9) FY21 increase due to increase in installation support for permanent shipboards systems, technical refresh of interim capability Portable Embarkation Kits (PEKs), and fluctuations in the locations of installations.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip	Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) CCOP Systems & Subsystems(†)		2019	VARIOUS (10) / VARIOUS	C / CPFF	NIWC PAC/NIWC LANT	Feb 2019	Jul 2019	42	238.791	Y		Oct 2018
1.1.1) CCOP Systems & Subsystems(†)	✓	2019	VARIOUS (10) / VARIOUS	C / CPFF	NIWC PAC/NIWC LANT	Feb 2019	Jul 2019	81	228.571	Y		Oct 2018
1.1.1) CCOP Systems & Subsystems(†)		2020	VARIOUS (10) / VARIOUS	C / CPFF	NIWC PAC/NIWC LANT	Feb 2020	Jul 2020	38	242.450	N	Apr 2020	Oct 2019
1.1.1) CCOP Systems & Subsystems(†)		2021 (11)	VARIOUS (10) / VARIOUS	C / CPFF	NIWC PAC/NIWC LANT	Feb 2021	Jul 2021	39	248.872	N	Apr 2021	Oct 2020
2.1.1) [USFFC ID] Global Signal Analysis Laboratory (GSAL)		2019	Classified / Classified	C / FFP	Washington DC	Nov 2018	Nov 2018	1	771.000	N	Nov 2018	Nov 2018
2.1.1) [USFFC ID] Global Signal Analysis Laboratory (GSAL)		2020	Classified / Classified	C / FFP	Washington DC	Nov 2019	Nov 2019	1	784.000	N	Nov 2019	Nov 2019
2.1.1) [USFFC ID] Global Signal Analysis Laboratory (GSAL)		2021	Classified / Classified	C / FFP	Washington DC	Oct 2020	Oct 2020	1	778.000	N	Nov 2020	Oct 2020
3.1.1) [USFFC ID] System Integration & Installation of Hardware (FIOC)		2019	SPAWAR / San Diego	C / FFP	SPAWAR San Diego	Sep 2019	Mar 2020	1	700.000	N	Nov 2018	Oct 2018
3.1.1) [USFFC ID] System Integration & Installation of Hardware (FIOC)		2020	SPAWAR / San Diego	C / FFP	SPAWAR San Diego	Oct 2019	Oct 2019	1	721.000	N	Nov 2019	Oct 2019
3.1.1) [USFFC ID] System Integration & Installation of Hardware (FIOC)		2021	National Security Agency (12) / NSA	C / FFP	NSA	Feb 2021	May 2021	1	706.000	N	May 2021	Feb 2021
4.1.1) [USFFC ID] EW Fleet Synthethic Trainer Consolidation		2020	SSC PAC / San Diego	C / FFP	SPAWAR San Diego	Feb 2020	Feb 2020	1	159.000	N	Aug 2020	Jan 2020
4.1.1) [USFFC ID] EW Fleet Synthethic Trainer Consolidation		2021	SSC PAC / San Diego	C / FFP	SPAWAR San Diego	Oct 2020	Jan 2021	1	562.000	N	Feb 2021	Oct 2020
5.1.1) [USFFC N7] Tier 1 TS/SCI NCTE & VOIP Procurement & Installation		2019	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2018	Oct 2018	1	456.000	N	Jan 2019	Mar 2017
5.1.2) [USFFC N7] Tier 1 Life Cycle Management (LCM)		2019	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2018	Dec 2018	1	226.000	N	Jan 2019	Mar 2017
5.1.2) [USFFC N7] Tier 1 Life Cycle Management (LCM)		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2019	Dec 2019	1	225.000	N	Jan 2020	Oct 2018
5.1.2) [USFFC N7] Tier 1 Life Cycle Management (LCM)		2021	Alion Science & Technology / McLean, VA	C / FFP	DITC	Dec 2020	Dec 2020	1	294.000	N	Feb 2021	
5.1.3) [USFFC N7] SIGINT / C-ISR Systems - Permanent Shipboard Installation		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2019	Dec 2019	17	52.941	N	Jan 2020	Mar 2017

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip	Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
5.1.3) [USFFC N7] SIGINT / C-ISR Systems - Permanent Shipboard Installation		2021	Alion Science & Technology / McLean, VA	C / FFP	DITC	Dec 2020	Dec 2020	19	53.370	N	Feb 2021	Apr 2019
5.1.4) [USFFC N7] SIGINT / C-ISR Systems - Life Cycle Management (LCM)		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2019	Dec 2019	17	7.780	N	Jan 2020	Oct 2019
5.1.4) [USFFC N7] SIGINT / C-ISR Systems - Life Cycle Management (LCM)		2021	Alion Science & Technology / McLean, VA	C / FFP	DITC	Dec 2020	Dec 2020	27	5.000	N	Jan 2021	Nov 2020
5.1.5) [USFFC N7] Fleet Training Wholeness (FTW)		2019	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Nov 2018	Nov 2018	1	700.000	N	Oct 2018	Dec 2016
5.1.5) [USFFC N7] Fleet Training Wholeness (FTW)		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2019	Dec 2019	1	659.000	N	Oct 2019	Mar 2017
5.1.5) [USFFC N7] Fleet Training Wholeness (FTW)		2021	Alion Science & Technology / McLean, VA	C / FFP	DITC	Dec 2020	Dec 2020	1	1,334.000	N	Oct 2020	May 2019

(†) indicates the presence of a P-21

Footnotes:

(10) Cryptologic Carry-on Program (CCOP) equipment is procured according to the overall requirements detailed in the Shipboard Information Warfare/Cryptologic System Operational Requirements Document and specific execution year fleet requirements as defined by the Signals Of Interest (SOI) Integrated Product Team (IPT). Due to a continually changing threat environment, detailed requirements are dynamic, contract award timelines and equipment procured varies each year by quantity and type.

(11) Vendors: BIT systems, TICOM, KAB, SRC, GRSi,

(12) Starting in FY 21

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	**Item Number / Title [DODIC]:** 1 / Cryptologic Communications Equip

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019												Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) CCOP Systems & Subsystems (1)																															
Prior Years Deliveries: 399																															
	1	2019	NAVY	42	0	42					A -	-	-	-	-	4	4	4	4	5	5	5	5	5	1						0
✓	1	2019	NAVY	81 (13)	0	81					A -	-	-	-	-	6	6	6	7	7	7	7	7	7	7	7	7				0
	1	2020	NAVY	38	0	38																	A -	-	-	-	-	5	5	5	23
	1	2021	NAVY	39	0	39																									39
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	**Item Number / Title [DODIC]:** 1 / Cryptologic Communications Equip

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
										Calendar Year 2021												Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.1) CCOP Systems & Subsystems (1)																															
Prior Years Deliveries: 399																															
	1	2019	NAVY	42	42	0																									0
✓	1	2019	NAVY	81 (13)	81	0																									0
	1	2020	NAVY	38	15	23	5	5	5	5	3																				0
	1	2021	NAVY	39	0	39					A -	-	-	-	-	5	5	5	5	5	5	5	4								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16	**P-1 Line Item Number / Title:** 3501 / Cryptologic Communications Equip	**Item Number / Title [DODIC]:** 1 / Cryptologic Communications Equip

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	VARIOUS (10) - VARIOUS	1	40	90	0	4	5	9	0	4	5	9

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Footnotes:
(10) Cryptologic Carry-on Program (CCOP) equipment is procured according to the overall requirements detailed in the Shipboard Information Warfare/Cryptologic System Operational Requirements Document and specific execution year fleet requirements as defined by the Signals Of Interest (SOI) Integrated Product Team (IPT). Due to a continually changing threat environment, detailed requirements are dynamic, contract award timelines and equipment procured varies each year by quantity and type.
(13) CCOP FY19 - OCO funds for SOUTHCOM ISR requirements and funds CCOP equipment to SOUTHCOM maritime assets.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	173.861	40.649	61.370	70.689	0.000	70.689	68.805	68.841	69.480	70.840	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	173.861	40.649	61.370	70.689	0.000	70.689	68.805	68.841	69.480	70.840	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**173.861**	**40.649**	**61.370**	**70.689**	**0.000**	**70.689**	**68.805**	**68.841**	**69.480**	**70.840**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	0.226	0.284	-	0.284	0.287	0.346	0.382	0.390	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2021 funding request was reduced by $0.722 million to account for the availability of prior year execution balances.

The Coast Guard Equipment line funds the Coast Guard Combat System Suite for United States Coast Guard (USCG) cutters under the Coast Guard Surface Asset Acquisition Program. Under inter-service agreement (delineated in OPNAVINST 4000.79C), DON plans, programs, and budgets for specific Navy military equipment, systems and logistic support requirements for Coast Guard units to ensure the Coast Guard is prepared to execute naval warfare tasks in consonance with US Navy units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation.

The Combat Systems and Weapons Suite will be aligned with future naval ship building programs to support commonality among the two Service's systems and meet National Fleet objectives.

The Combat System Suite must compliment and integrate with Navy Combat Systems. The suite is an appropriate balance of equipment to ensure the Coast Guard is prepared to accomplish the assigned Naval Warfare tasks in concert with US Navy units. The Surface Asset Acquisition Program Combat Suites include the following:

[P40A / CG001 - SPQ-9B RADAR]: Provides the AN/SPQ-9B radar for the Maritime Security Cutter, Large (WMSL) Class, aka the National Security Cutter (NSC), to track surface targets and low fliers in support of potential gun engagements.

[P40A / CG002 IFF AIMS]: Provides the AN/UPX-29A Identification Friend or Foe (IFF) System for the National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), and the Offshore Patrol Cuter (OPC) Class, aka the Maritime Security Cutter, Medium (WMSM). The AN/APX-123 Transponder is procured for the Fast Response Cutter (FRC) aka Patrol Coastal Cutter (WPC).

[P40A / CG003 DECOYS MK 53]: Provides the MK 53 Mod 6 Decoy Launching System (DLS) for the National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), and the Offshore Patrol Cuter (OPC) Class, aka the Maritime Security Cutter, Medium (WMSM) to provide soft-kill capability.

[P40A / CG004 SLQ-32]: Provides the AN/SLQ-32 Electronic Warfare System and the Battle Force Electronic Warfare Trainer (BEWT) for the National Security Cutter (NSC) Class, aka the Maritime Security Cutter, Large (WMSL), to perform Electronic Support Measures to support soft-kill measures.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P40A / CG005 MK 46/MK 20 OPTICAL SIGHT]: Provides the MK 46 Mod 1 Optical Sighting System (OSS) for the National Security Cutter, hulls WMSL 750-753. The MK 20 Mod 0 Electro-Optical Sighting System (EOSS) is procured for the National Security Cutter, (NSC) hulls WMSL 754-760 and the Offshore Patrol Cutter (OPC). These sighting systems are components of the MK48 Gun Weapon System (GWS) and provide fire control optical daytime and thermal imaging (infrared) sensor, and laser range finding to support engagements of hostile surface and air targets.

[P40A / CG006 COMBAT SYSTEM INTEGRATION]: Ensures successful integration and system interoperability of Navy type equipment that affects the Combat System of USCG NSCs (WMSLs), FRCs (WPCs), OPC (WMSMs), and the 270' Medium Endurance Cutter (WMEC) modernization effort.

[P40A / CG007 MULTI-MODE RADAR]: MMR will provide Air Surveillance, Surface Surveillance, GWS support and IFF Antenna functions for Offshore Patrol Cutter (OPC) and Polar Security Cutter (PSC).

[P40A / CG008 ATHENA CCD]: ATHENA Control, Correlation & Display (CCD) System for the OPC. The ATHENA CCD uses existing AEGIS BSL 9, Common Source Library (CSL) code to control and display MMR and IFF data. The systems will also provide target queuing for Gun Weapon System engagement.

FY2017-2018 ATHENA Combat System Control and Display integration supports software upgrade and hardware/software integration of the Technical Insertion (TI)-16 Common Display System for the MMR and IFF to provide data to the AN/SLQ-32(V)6 and the MK48 Gun Weapon System for target engagement on the Offshore Patrol Cutter (OPC), aka the Maritime Security Cutter, Medium (WMSM). Includes safety, certification, technical documentation, and information assurance efforts.

[P40A / OPC C4I]: Funds are required for the procurement of Command, Control, Communications, Computers, and Intelligence (PEO C4I) for the new OPC Class, the Coast Guard's highest acquisition priority. Under inter-service agreement, the Navy budgets for specific Navy military equipment, systems and logistic support requirements for Coast Guard units to ensure the Coast Guard is prepared to execute naval warfare tasks in consonance with US Navy units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation. Specific C4I systems to be procured include: AN/SRC-65 VHF/UHF Line of Sight Satellite Communication, ARC-210 Radios (Qty 11 per hull); OE-570D Antenna Qty (1); Navy Modular Automated Communications System (AN/SYQ-26) Qty (2);CRYPTO Qty (1); OA-9277A Antenna Coupler Qty (2); and Command and Control Processor (C2P) AN/UYQ-120 Qty (2).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Coast Guard Equipment	P-5a, P-21			- / 173.861	- / 40.649	- / 61.370	- / 70.689	- / -	- / 70.689
P-40	**Total Gross/Weapon System Cost**				**- / 173.861**	**- / 40.649**	**- / 61.370**	**- / 70.689**	**- / 0.000**	**- / 70.689**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
Funding and inter-service agreement are used to procure Navy-Type/Navy-Owned (NT/NO) combat systems, support equipment, Integrated Logistics Support (ILS), certification, test and production support for USCG National Security Cutter (WMSL Class), Fast Response Cutter (WPC Class) and Offshore patrol Cutter (WMSM Class) being constructed under the Coast Guard's Surface Asset Acquisition Program. Funding also supports C4I systems and associated logistic support for the Offshore Patrol Cutter. These efforts are ongoing.

FY 2021 funds provide AN/SPQ-9B ILS support for WMSLs; procure IFF AN/APX-123(V) equipment, ILS and certification support for WPCs; procure IFF UPX-29A equipment, INCO spares, and ILS support for WMSMs and WSMLs; support IFF ILS and multi-year certifications for WMSL; procure MK53 MOD 10 DLS for WMSM and WMSL; procure the EOSS for the WMSM; provide combat system integration for WMSLs, WPCs, and WMSMs; procure the Multi-mode Radar for the WMSM program; provide WMSM combat system integration of the Technical Insertion (TI)-16 Common Display System and integration support for the ATHENA Control Correlation and Display (CCD) System; AN/SRC-65 VHF/ UHF Line of Sight Satellite Communication ARC-210 Radios; OE-570D Antenna; Navy Modular Automated Communications System (AN/SYQ-26); CRYPTO; OA-9277A Antenna Coupler and Command and Control Processor (C2P) AN/UYQ-120.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items Title: Coast Guard Equipment

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) CG001 - SPQ-9B RADAR																				
1.1) SPQ-9B ILS/ TEST SUPPORT (1)	A		-	-	6.704	-	-	0.380	-	-	0.446	-	-	0.455	-	-	-	-	-	0.455
1.2) SPQ-9B RADAR (2)(†)	A		3,941K	2	7.882	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) CG001 - SPQ-9B RADAR			**-**	**-**	***14.586***	**-**	**-**	***0.380***	**-**	**-**	***0.446***	**-**	**-**	***0.455***	**-**	**-**	**-**	**-**	**-**	***0.455***
2) CG002 IFF AIMS																				
2.1) IFF AIMS CERTIFICATION FRC	A		-	-	0.808	-	-	0.129	-	-	0.132	-	-	0.135	-	-	-	-	-	0.135
2.2) IFF AIMS ILS SUPPORT FRC	A		-	-	1.678	-	-	0.222	-	-	0.226	-	-	0.230	-	-	-	-	-	0.230
2.3) IFF AIMS EQUIPMENT FRC (3)(†)	A		103,394.74	38	3.929	106,000.00	3	0.318	81,000.00	3	0.243	83,000.00	3	0.249	-	-	-	83,000.00	3	0.249
2.4) IFF EQUIPMENT/ INCO SPARES OPC (4)(†)	A		162,500.00	2	0.325	509,000.00	1	0.509	681,000.00	1	0.681	536,500.00	2	1.073	-	-	-	536,500.00	2	1.073
2.5) IFF UPX-46 OPC (5)(†)	A		613,666.67	3	1.841	947,000.00	1	0.947	965,000.00	1	0.965	983,000.00	2	1.966	-	-	-	983,000.00	2	1.966
2.6) IFF ILS SUPPORT OPC	A		-	-	0.454	-	-	0.233	-	-	0.237	-	-	0.484	-	-	-	-	-	0.484
2.7) IFF AIMS TEST HARDWARE OPC	A		-	-	-	-	-	0.843	-	-	-	-	-	-	-	-	-	-	-	-
2.8) IFF AIMS NSC	A		2,337K	4	9.347	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.9) IFF AIMS UPX-29 LLT NSC	A		207,200.00	5	1.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.10) OPC IFF INTEGRATION (6)	A		-	-	-	-	-	-	-	-	1.833	-	-	-	-	-	-	-	-	-
2.11) IFF AIMS MODIFICATION KITS	A		81,250.00	4	0.325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.12) IFF AIMS SUPPORT EQUIPMENT NSC(†)	A		84,875.00	8	0.679	96,000.00	3	0.288	-	-	-	-	-	-	-	-	-	-	-	-
2.13) IFF AIMS PRODUCTION SUPPORT NSC	A		-	-	0.781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.14) IFF AIMS ILS/ TEST SUPPORT NSC	A		-	-	1.082	-	-	0.975	-	-	0.120	-	-	0.114	-	-	-	-	-	0.114
2.15) IFF AIMS CERTIFICATION NSC	A		-	-	0.524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) CG002 IFF AIMS			**-**	**-**	***22.809***	**-**	**-**	***4.464***	**-**	**-**	***4.437***	**-**	**-**	***4.251***	**-**	**-**	**-**	**-**	**-**	***4.251***

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items Title: Coast Guard Equipment

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
3) CG003 DECOYS MK 53																				
3.1) MK53 MOD 6/10 DLS OPC (7)(†)	A		740,000.00	3	2.220	1,254K	1	1.254	1,055K	2	2.110	1,074K	2	2.149	-	-	-	1,074K	2	2.149
3.2) MK53 MOD 6/10 DLS NSC	A		506,000.00	2	1.012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.3) MK53 ILS/TEST SUPPORT	A		-	-	4.609	-	-	0.649	-	-	0.607	-	-	0.772	-	-	-	-	-	0.772
Subtotal: 3) CG003 DECOYS MK 53			**-**	**-**	***7.841***	**-**	**-**	***1.903***	**-**	**-**	***2.717***	**-**	**-**	***2.921***	**-**	**-**	**-**	**-**	**-**	***2.921***
4) CG004 SLQ-32																				
4.1) BEWT NSC	A		1,097K	1	1.097	-	-	0.022	-	-	-	-	-	-	-	-	-	-	-	-
4.2) SLQ-32 ELECTRONIC WARFARE SYSTEM	A		14,090K	2	28.180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) SLQ-32 REFURBISHMENT	A		2,310K	3	6.931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) SLQ-32 SUPPORT EQUIPMENT	A		159,000.00	1	0.159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) SLQ-32 PRODUCTION SUPPORT NSC	A		-	-	2.792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.6) SLQ-32 ILS/ TEST SUPPORT	A		-	-	1.888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7) SLQ-32 CERTIFICATION	A		-	-	0.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) CG004 SLQ-32			**-**	**-**	***41.385***	**-**	**-**	***0.022***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) CG005 MK 46/MK 20 OPTICAL SIGHT																				
5.1) MK20 (EOSS) OPC(†)	A		845,000.00	2	1.690	1,755K	2	3.510	1,788K	2	3.576	1,822K	2	3.644	-	-	-	1,822K	2	3.644
5.2) ILS/TEST SUPPORT (8)	A		-	-	0.225	-	-	0.466	-	-	0.714	-	-	0.729	-	-	-	-	-	0.729
5.3) MODIFICATION KITS NSC	A		-	-	0.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.4) MK 46/MK 20 NSC(†)	A		8,124K	2	16.247	1,755K	1	1.755	1,788K	1	1.788	1,822K	1	1.822	-	-	-	1,822K	1	1.822
5.5) DATA NSC	A		-	-	0.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6) SOFTWARE NSC	A		-	-	2.402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7) PROGRAM SUPPORT NSC	A		-	-	1.632	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8) ORDALT NSC	A		-	-	0.770	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items Title: Coast Guard Equipment

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
5.9) ILS/TEST SPT NSC (9)	A		-	-	2.201	-	-	0.048	-	-	0.127	-	-	-	-	-	-	-	-	-
Subtotal: 5) CG005 MK 46/MK 20 OPTICAL SIGHT			**-**	**-**	***25.750***	**-**	**-**	***5.779***	**-**	**-**	***6.205***	**-**	**-**	***6.195***	**-**	**-**	**-**	**-**	**-**	***6.195***
6) CG006 COMBAT SYSTEM INTEGRATION																				
6.1) CSI	A		-	-	17.331	-	-	2.856	-	-	2.875	-	-	2.588	-	-	-	-	-	2.588
6.2) IFF Mode 5 Integration (10)	A		-	-	-	-	-	-	-	-	-	-	-	2.541	-	-	-	-	-	2.541
6.3) SLQ 32 (V6) Integration (11)	A		-	-	-	-	-	-	-	-	-	-	-	2.541	-	-	-	-	-	2.541
6.4) Combat System Integration Lifecycle Engineering	A		-	-	-	-	-	-	-	-	-	-	-	2.197	-	-	-	-	-	2.197
Subtotal: 6) CG006 COMBAT SYSTEM INTEGRATION			**-**	**-**	***17.331***	**-**	**-**	***2.856***	**-**	**-**	***2.875***	**-**	**-**	***9.867***	**-**	**-**	**-**	**-**	**-**	***9.867***
7) CG007 MULTI-MODE RADAR																				
7.1) MMR SYSTEM (12)(†)	A		5,750K	3	17.249	8,845K	1	8.845	9,013K	3	27.039	9,184K	2	18.368	-	-	-	9,184K	2	18.368
7.2) MMR INTEGRATION (13)	A		-	-	11.288	-	-	-	-	-	0.488	-	-	-	-	-	-	-	-	-
7.3) MMR ILS/TEST SUPPORT (14)	A		-	-	1.765	-	-	1.797	-	-	1.834	-	-	2.471	-	-	-	-	-	2.471
Subtotal: 7) CG007 MULTI-MODE RADAR			**-**	**-**	***30.302***	**-**	**-**	***10.642***	**-**	**-**	***29.361***	**-**	**-**	***20.839***	**-**	**-**	**-**	**-**	**-**	***20.839***
8) CG008 ATHENA CCD																				
8.1) ATHENA CCD INTEGRATION (15)	A		-	-	7.565	-	-	2.563	-	-	3.226	-	-	12.148	-	-	-	-	-	12.148
8.2) ATHENA TI-16 CPS/CDS (16)	A		-	-	-	1,480K	1	1.480	1,816K	1	1.816	1,828K	2	3.657	-	-	-	1,828K	2	3.657
Subtotal: 8) CG008 ATHENA CCD			**-**	**-**	***7.565***	**-**	**-**	***4.043***	**-**	**-**	***5.042***	**-**	**-**	***15.805***	**-**	**-**	**-**	**-**	**-**	***15.805***
9) OPC C4I (17)																				
9.1) CRYPTO(†)	A		62,000.00	1	0.062	62,000.00	1	0.062	62,000.00	2	0.124	62,000.00	2	0.124	-	-	-	62,000.00	2	0.124
9.2) C2P (18)(†)	A		1,215K	1	1.215	1,164K	2	2.328	1,164K	2	2.328	1,164K	2	2.328	-	-	-	1,164K	2	2.328
9.3) ARC-210 (19)(†)	A		295,909.09	11	3.255	280,000.00	11	3.080	280,000.00	22	6.160	280,000.00	22	6.160	-	-	-	280,000.00	22	6.160
9.4) OE-570D (20)(†)	A		443,000.00	1	0.443	410,000.00	2	0.820	410,000.00	2	0.820	576,000.00	1	0.576	-	-	-	576,000.00	1	0.576
9.5) OA-9277A(†)	A		293,000.00	1	0.293	271,000.00	3	0.813	271,000.00	2	0.542	271,000.00	2	0.542	-	-	-	271,000.00	2	0.542
9.6) NAVMACs(†)	A		333,500.00	2	0.667	313,000.00	1	0.313	313,000.00	1	0.313	313,000.00	2	0.626	-	-	-	313,000.00	2	0.626

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items Title: Coast Guard Equipment

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
9.7) FLEET BROADCAST(†)	A		357,000.00	1	0.357	393,000.00	8	3.144	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 9) OPC C4I			**-**	**-**	***6.292***	**-**	**-**	***10.560***	**-**	**-**	***10.287***	**-**	**-**	***10.356***	**-**	**-**	**-**	**-**	**-**	***10.356***
Total			**-**	**-**	**173.861**	**-**	**-**	**40.649**	**-**	**-**	**61.370**	**-**	**-**	**70.689**	**-**	**-**	**-**	**-**	**-**	**70.689**

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) FY2020 through FY2025 funding for AN/SPQ-9B system engineering, radar performance evaluation, test and evaluation, planning and support for WMSL (NSC) Class. Minor cost increase in FY2020 and inclusion of ILS support through the FYDP to fund previously unfunded requirement for successful SPQ-9B introduction and certification on WMSL (NSC) class hulls.

(2) Provides the AN/SPQ-9B radar for the Maritime Security Cutter, Large (WMSL) Class, aka the National Security Cutter, to track surface targets and low fliers in support of potential gun engagements.

(3) IFF Equipment suite for the WPC consists of MK XII equipment, Radar Control Transmitter (RCU), Radar Receiver-Transmitter shipping and installation fixtures which have various unit costs. The IFF AIMS Equipment unit price is an average unit cost for the various components being procured that year.

(4) IFF Equipment suite for the OPC consists of the RT-1912C, C-12720, AS-177B, AN/APX-123 KIT, AN/UPX-41(C), AN/USM-719, KIV-78 and INCO spares with various unit costs.

(5) IFF UPX-29A WMSM item name corrected to IFF UPX-46 WMSM

(6) IFF UPX-46 must be integrated with the WMSM (OPC) AEGIS B/L 9G. Budget reflects the portion of costs allocated by the Program Office for the combined contractor and government integration effort.

(7) MK53 MOD 6/10 DLS OPC per unit cost has achieved a minor cost savings for FY2020 and the following years.

(8) Funding increase in FY2020 is due to addition of 1.1 FTEs to support planned Integration and Testing for the WMSM (OPC) Class at NSWC Port Hueneme. This additional ILS/TEST Support is required to keep pace with the increase in procurement quantities.

(9) Funding increase in FY2020 due to addition of 0.5 FTE to address WMSL equipment integration and testing requirements for the new optical sight.

(10) Non-recurring engineering effort for the integration of the IFF Mode 5 on new construction cutters.

(11) Non-recurring engineering effort for the integration of the SLQ-32 (V6) on new construction cutters.

(12) FY2020 is the start of two (2) MMR procurements per year for the OPC program. One (1) additional MMR is required as a training asset in FY2020. Additional MMR procurements for the PSC program begin in FY2022.

(13) The Multi-Mode Radar (MMR) integration efforts include the software upgrade to correlate radar video tracks and IFF information and the detail design of the IFF antenna onto the MMR antenna hardware integration to include drawing updates and technical publications.

(14) FY 2020 MMR ILS/TEST SUPPORT costs are attributable to the installation costs of the Multi-Mode Radar (MMR) in FY 2020. Each MMR delivery has an associated installation cost separate from the baseline ILS/TEST SUPPORT that supports the MMR Program, beginning in the first year of delivery (FY 2019).

(15) The Combat System Control and Display OPC integration supports hardware and software integration of the Technical Insertion (TI)-16 Common Display System for the Multi-Mode Radar, IFF and to provide data to the MK48 Gun Weapon System for target engagement. Includes safety, certification, technical documentation, and information assurance efforts. FY 2020 through FY 2023 increase attributable to the required addition of AEGIS Technical Representative support, Combat System Engineering and Integration support, and continued Combat System Integration efforts by the contractor to maintain and update the Athena (AEGIS Baseline 9G) CCD program. FY 2021 increase is also attributable, in part, to new Athena integration efforts required up front for the Polar Security Cutter (PSC) program.

(16) FY 2021 increase attributable to one (1) additional TI-16 CPS/CDSs system for the first Polar Security Cutter (PSC) hull. This is in addition to the annual purchase of the TI-16 CPS/CDS system for the Offshore Patrol Cutter (OPC).

(17) No associated equipment installation costs are incurred across the FYDP. USCG will fund the installation of the C4I systems. Procurements provide assets for OPC Hulls #1 through Hull #9 across the FYDP.

(18) FY19 C2P contract award moved from June 2019 to March 2020 due to production delays. FY20 contract is still on track to award in June 2020.

(19) Each ARC-210 system requires 11 radios. In FY20, USCG starts to build two OPC hulls per year. Procuring 22 radios for two ARC-210 systems each year starting with OPC 4 & 5 in FY20.

(20) FY 2021 unit cost increase for the OE-570D due to new procurement contract.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items: Coast Guard Equipment

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) CG001 - SPQ-9B RADAR												
1.2) SPQ-9B RADAR (2)(†)		2018 (21)	DLS Laurel / Johnstown, PA	C / FFP	NAVSEA	Jul 2018	Jan 2020	2	3,941K	Y		Sep 2017
2) CG002 IFF AIMS												
2.3) IFF AIMS EQUIPMENT FRC (3)		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2019	Jul 2020	3	106,000.00	Y		Dec 2015
2.3) IFF AIMS EQUIPMENT FRC (3)		2020	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2020	Jul 2021	3	81,000.00	N		Dec 2015
2.3) IFF AIMS EQUIPMENT FRC (3)		2021	NAVAIR NAWC/AD / ST. INIGOES, MD	C / TBD	** NO PCO **	Oct 2020	Apr 2022	3	83,000.00	N		
2.4) IFF EQUIPMENT/INCO SPARES OPC (4)		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2019	Jul 2020	1	509,000.00	Y		Dec 2015
2.4) IFF EQUIPMENT/INCO SPARES OPC (4)		2020	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2020	Jul 2021	1	681,000.00	N		Dec 2015
2.4) IFF EQUIPMENT/INCO SPARES OPC (4)		2021	NAVAIR NAWC/AD / ST. INIGOES, MD	C / TBD	** NO PCO **	Oct 2020	Apr 2022	2	536,500.00	N		
2.5) IFF UPX-46 OPC (5)		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2019	Jul 2020	1	947,000.00	Y		Dec 2015
2.5) IFF UPX-46 OPC (5)		2020	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2020	Jul 2021	1	965,000.00	N		Feb 2015
2.5) IFF UPX-46 OPC (5)		2021	NAVAIR NAWC/AD / ST. INIGOES, MD	C / TBD	** NO PCO **	Oct 2020	Apr 2022	2	983,000.00	N		
2.12) IFF AIMS SUPPORT EQUIPMENT NSC		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAWCAD	Oct 2018	Oct 2019	3	96,000.00	Y		Dec 2015
3) CG003 DECOYS MK 53												
3.1) MK53 MOD 6/10 DLS OPC (7)		2019	BAES / AUSTRALIA	C / FP	NAVSEA	Mar 2019	Jul 2020	1	1,254K	Y		Jul 2017
3.1) MK53 MOD 6/10 DLS OPC (7)		2020	BAES / AUSTRALIA	C / FP	NAVSEA	Mar 2020	Jul 2021	2	1,055K	Y		Jul 2017
3.1) MK53 MOD 6/10 DLS OPC (7)		2021	BAES / AUSTRALIA	C / TBD	** NO PCO **	Oct 2020	Feb 2022	2	1,074K	N		
5) CG005 MK 46/MK 20 OPTICAL SIGHT												
5.1) MK20 (EOSS) OPC		2019	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Apr 2019	Oct 2020	2	1,755K	Y		Jan 2016
5.1) MK20 (EOSS) OPC		2020	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Feb 2020	Aug 2021	2	1,788K	Y		Jan 2019
5.1) MK20 (EOSS) OPC		2021	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Feb 2021	Aug 2022	2	1,822K	Y		Jan 2019
5.4) MK 46/MK 20 NSC		2018	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Apr 2018	Apr 2020	1	1,722K	Y		Sep 2016
5.4) MK 46/MK 20 NSC		2019	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	May 2019	Nov 2020	1	1,755K	Y		Sep 2016
5.4) MK 46/MK 20 NSC		2020	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	May 2020	Nov 2021	1	1,788K	Y		Sep 2016
5.4) MK 46/MK 20 NSC		2021	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	May 2021	Nov 2022	1	1,822K	Y		Sep 2016

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items: Coast Guard Equipment

Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
7) CG007 MULTI-MODE RADAR												
7.1) MMR SYSTEM (12)		2019 (22)	SAAB USA / Syracuse, NY, USA	C / FFP	NAVSEA	Mar 2019	Jun 2020	1	8,845K	Y		Oct 2016
7.1) MMR SYSTEM (12)		2020 (23)	SAAB USA / Syracuse, NY, USA	C / FFP	NAVSEA	Mar 2020	Jun 2021	3	9,013K	Y		Oct 2016
7.1) MMR SYSTEM (12)		2021 (24)	SAAB USA / Syracuse, NY, USA	C / FFP	NAVSEA	Mar 2021	Jun 2022	2	9,184K	Y		Oct 2016
9) OPC C4I												
9.1) CRYPTO		2019	SSC LANT / Charleston, SC	C / FFP	NIWC LANT	Jan 2019	Jan 2020	1	62,000.00	Y		
9.1) CRYPTO		2020	SSC LANT / Charleston, SC	C / FFP	NIWC LANT	Jan 2020	Jan 2021	2	62,000.00	Y		
9.1) CRYPTO		2021	SSC LANT / Charleston, SC	C / FFP	NIWC LANT	Jan 2021	Jan 2022	2	62,000.00	Y		
9.2) C2P (18)		2019	NIEF (Lockheed) @San Diego / New MFG - Loc	C / CPFF	NAVWAR	Mar 2020	Sep 2021	2	1,164K	Y		
9.2) C2P (18)		2020	CALI Contract (DTS System) / General Dynamics	C / TBD	NAVWAR	Jun 2020	Dec 2021	2	1,164K	Y		
9.2) C2P (18)		2021	CALI Contract (DTS System) / General Dynamics	C / TBD	NAVWAR	Jun 2021	Dec 2022	2	1,164K	Y		
9.3) ARC-210 (19)		2019	Rockwell Collins / Cedar Rapids, IA	C / FFP	NAWCAD	Jan 2019	Jul 2020	11	280,000.00	Y		
9.3) ARC-210 (19)		2020	Rockwell Collins / Cedar Rapids, IA	C / TBD	NAWCAD	Jan 2020	Jul 2021	22	280,000.00	Y		
9.3) ARC-210 (19)		2021	Rockwell Collins / Cedar Rapids, IA	C / TBD	NAWCAD	Jan 2021	Jul 2022	22	280,000.00	Y		
9.4) OE-570D (20)		2019	Trivec Avant / Huntington Beach, CA	C / FFP	NAVWAR	Jun 2019	Feb 2020	2	410,000.00	Y		
9.4) OE-570D (20)		2020	Trivec Avant / Huntington Beach, CA	C / TBD	NAVWAR	Feb 2020	Aug 2020	2	410,000.00	N	Jan 2020	
9.4) OE-570D (20)		2021	Trivec Avant / Huntington Beach, CA	C / TBD	NAVWAR	Feb 2021	Aug 2021	1	576,000.00	N	Jan 2020	
9.5) OA-9277A		2019	Rockwell Collins/Cedar Rapids / NAWCAD	C / FFP	NAVWAR	Jan 2019	Sep 2021	3	271,000.00	Y		
9.5) OA-9277A		2020	Rockwell Collins/Cedar Rapids / NAWCAD	C / TBD	NAVWAR	Jan 2020	Sep 2021	2	271,000.00	Y		
9.5) OA-9277A		2021	Rockwell Collins/Cedar Rapids / NAWCAD	C / TBD	NAVWAR	Jan 2021	Jul 2022	2	271,000.00	Y		
9.6) NAVMACs		2019	General Dynamics / Taunton, MA	C / FFP	CECOM	Jan 2019	Aug 2019	1	313,000.00	Y		
9.6) NAVMACs		2020	General Dynamics / Taunton, MA	C / FFP	CECOM	Jan 2020	Aug 2020	1	313,000.00	Y		
9.6) NAVMACs		2021	General Dynamics / Taunton, MA	C / FFP	CECOM	Jan 2021	Aug 2021	2	313,000.00	Y		
9.7) FLEET BROADCAST		2019	SSC PAC @San Diego / San Diego	C / FFP	NIWC PAC	Jul 2019	Jan 2020	8	393,000.00	Y		

(†) indicates the presence of a P-21

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment	**Aggregated Items:** Coast Guard Equipment

Footnotes:

(21) Contract awarded late July 2018 by PEO IWS 2R. SPQ-9B ordered for WMSL (NSC) 758-759 (NSC Hulls 9 and 10).

(22) MFG List's Procurement Lead Time for this order is approximately 15 months, with scheduled delivery of 2020-06.

(23) MFG List's Procurement Lead Time for this order is approximately 15 months, with scheduled delivery of 2021-06.

(24) MFG List's Procurement Lead Time for this order is approximately 15 months, with scheduled delivery of 2022-06.

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment	**Aggregated Items:** Coast Guard Equipment

Items (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
										Calendar Year 2018												Calendar Year 2019									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) CG001 - SPQ-9B RADAR																															
1.2) SPQ-9B RADAR (2)																															
	9	2018	NAVY	2	0	2										A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment	**Aggregated Items:** Coast Guard Equipment

Items (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
										Calendar Year 2020												Calendar Year 2021									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) CG001 - SPQ-9B RADAR																															
1.2) SPQ-9B RADAR (2)																															
	9	2018	NAVY	2	0	2	-	-	-	1	-	-	-	-	-	1															0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	**P-1 Line Item Number / Title:** 3620 / Coast Guard Equipment	**Aggregated Items:** Coast Guard Equipment

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	DLS Laurel - Johnstown, PA			7	0	0	18	18	0	0	18	18

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

THIS PAGE INTENTIONALLY LEFT BLANK