UNCLASSIFIED

Department of Defense
Fiscal Year (FY) 2021 Budget Estimates

February 2020

Navy

Justification Book Volume 4 of 5

Other Procurement, Navy

BA 04

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The estimated cost of this report for the Department of the Navy (DON) is $37,466.

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.

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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.

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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
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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
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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
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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
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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
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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
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Total Obligational Authority
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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
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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
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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
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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
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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

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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

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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

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	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

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	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

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	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

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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	

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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	

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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	

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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

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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

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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

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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

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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

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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

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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

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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	

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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

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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

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 2: Ship Gun System Equipment	**P-1 Line Item Number / Title:** 5111 / Ship Gun Systems 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)*	22.335	5.337	5.451	5.540	0.000	5.540	5.690	5.816	5.888	5.998	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	22.335	5.337	5.451	5.540	0.000	5.540	5.690	5.816	5.888	5.998	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**22.335**	**5.337**	**5.451**	**5.540**	**0.000**	**5.540**	**5.690**	**5.816**	**5.888**	**5.998**	**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:

Ship gun system equipment provides funds for the procurement of equipment, material and Ordnance Alterations to improve combat effectiveness and logistic supportability for gun and mission planning systems, and ancillary support equipment.

P40A - 1/ The Naval Fires Control System is an automated mission planning and coordination system for the Naval Surface Fire Support (NSFS) System. It automates shipboard land attack battle management duties to be interoperable and consistent with joint C4ISR systems. The system significantly improves the Navy's ability to support forces ashore. These improvements provide enhanced capabilities and reduce total ownership costs by improving reliability and supportability of in-service systems. This system also reduces manning requirements for NSFS missions.

[P40A - 2 / NV039 Night Vision Devices]: Procures new Night Vision Devices (NVD) for ships and shore sites. Provides replacement of NVD and NVD Test Equipment.

[P40A - 2 / NV051 Optical Sight Systems Production Improvement]: Procures various Product Improvements for MK46 OSS/MK20 Electro-Optical Sight System (EOSS) on DDG 51 and CG 47 Class ships. The OSS is an integral element of the MK 34 Gun Weapon System. These improvements provide enhanced force protection capabilities, improve availability to address increase in Fleet underway operations, and reduce total ownership costs by improved reliability and supportability of in-service equipment systems. System and component improvements include: Mod 0 Technical Refresh, upgrade of Daylight Imaging Sensor Field of View, system power supplies, Mod 0 console / monitor upgrade, system obsolescence replacement and component level product improvements.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 2: Ship Gun System Equipment	**P-1 Line Item Number / Title:** 5111 / Ship Gun Systems 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	Naval Fires Control Sys				- / 2.517	- / 0.387	- / 0.395	- / 0.408	- / -	- / 0.408
P-40a	Gun Fire Control Equipment				- / 19.818	- / 4.950	- / 5.056	- / 5.132	- / -	- / 5.132
P-40	**Total Gross/Weapon System Cost**				**- / 22.335**	**- / 5.337**	**- / 5.451**	**- / 5.540**	**- / 0.000**	**- / 5.540**

*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:
Note: Before FY15, the programs were previously reported under budget line items (5209 and 5112).

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 2	**P-1 Line Item Number / Title:** 5111 / Ship Gun Systems Equipment	**Aggregated Items Title:** Naval Fires Control Sys

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) INSTALLATION																				
1.1) FC0002 Installation of NFCS Equipment	A		245,000.00	1	0.245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) FC010 Product Improvement/ ORDALT	A		-	-	1.146	-	-	0.182	-	-	0.185	-	-	0.194	-	-	-	-	-	0.194
1.3) FC011 Installation of ORDALT	A		-	-	0.469	-	-	0.093	-	-	0.095	-	-	0.097	-	-	-	-	-	0.097
1.4) FC830 Production Engineering Support (NFCS)	A		-	-	0.657	-	-	0.112	-	-	0.115	-	-	0.117	-	-	-	-	-	0.117
Subtotal: 1) INSTALLATION			**-**	**-**	***2.517***	**-**	**-**	***0.387***	**-**	**-**	***0.395***	**-**	**-**	***0.408***	**-**	**-**	**-**	**-**	**-**	***0.408***
Total			**-**	**-**	**2.517**	**-**	**-**	**0.387**	**-**	**-**	**0.395**	**-**	**-**	**0.408**	**-**	**-**	**-**	**-**	**-**	**0.408**

Note: Subtotals or Totals in this Exhibit P-40a 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 / 04 / 2	**P-1 Line Item Number / Title:** 5111 / Ship Gun Systems Equipment	**Aggregated Items Title:** Gun Fire Control 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 ($)	Qty (Each)	Total Cost ($ 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) Equipment																				
1.1) NV039 Night Vision Devices	A		-	-	9.062	-	-	2.316	-	-	2.363	-	-	2.396	-	-	-	-	-	2.396
1.2) NV051 Optical Sight Systems Production Improvement	A		-	-	10.756	-	-	2.634	-	-	2.693	-	-	2.736	-	-	-	-	-	2.736
Subtotal: 1) Equipment			**-**	**-**	***19.818***	**-**	**-**	***4.950***	**-**	**-**	***5.056***	**-**	**-**	***5.132***	**-**	**-**	**-**	**-**	**-**	***5.132***
Total			**-**	**-**	**19.818**	**-**	**-**	**4.950**	**-**	**-**	**5.056**	**-**	**-**	**5.132**	**-**	**-**	**-**	**-**	**-**	**5.132**

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

Footnotes:

(1) This program provides for the procurement of equipment, materials and Ordnance Alterations to improve combat effectiveness and maintain logistic supportability of Gun Fire Control Equipment, Optical Sight Systems (OSS) and Night Vision devices.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5227 / HARPOON Support 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)*	0.000	0.000	0.000	0.208	0.000	0.208	0.209	0.211	0.215	0.219	-	1.062
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.208	0.000	0.208	0.209	0.211	0.215	0.219	-	1.062
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.208**	**0.000**	**0.208**	**0.209**	**0.211**	**0.215**	**0.219**	**-**	**1.062**
(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 Director of the Undersea Warfare Division (N97) has ordered the reconstitution and integration of 60 Encapsulated (ENCAP) Harpoon BLK II missile systems for the 688 class submarine fleet in order to provide over the horizon surface strike capabilities to the fleet. The ENCAP Harpoon missiles provide Navy Los Angeles-class nuclear attack submarines (SSN) a sub-launched, all-weather, long-range Anti-Surface Warfare (ASuW) missile to attack enemy warships at stand-off ranges, to include Surface and Amphibious Action Groups. There are currently retired Encapsulated Harpoons located at the Letterkenny Army Depot that are candidates for reconstitution and delivery to the submarine fleet. In order to accomplish this order, the ENCAP program will refurbish and recertify existing ENCAP H1C All Up Rounds from deep storage to an 'as new' war ready material condition. (ENCAP Harpoons were placed in deep storage in 1996). The controlled storage conditions achieved by the missile capsule have preserved the material condition of the weapon system, allowing for relatively quick recertification and reissue. Due to the ease and speed of missile recertification the ENCAP Harpoon Reconstitution Program will fill a critical, time sensitive ASuW capability gap and meet Speed to the Fleet 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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5227 / HARPOON Support 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	HARPOON Support - Support Costs				- / 0.000	- / -	- / -	- / 0.208	- / -	- / 0.208
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 0.000**	**- / 0.000**	**- / 0.208**	**- / 0.000**	**- / 0.208**

*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 funding is provided to commence the submarine software update installs to enable submarine launchers to accommodate the ENCAP weapons.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5227 / HARPOON Support Equipment	**Aggregated Items Title:** HARPOON Support - Support Costs

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) Harpoon Support Equipment																				
1.1) ILS	A		-	-	-	-	-	-	-	-	-	-	-	0.208	-	-	-	-	-	0.208
Subtotal: 1) Harpoon Support Equipment			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***0.208***	**-**	**-**	**-**	**-**	**-**	***0.208***
Total			**-**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.208**	**-**	**-**	**-**	**-**	**-**	**0.208**

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

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support 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)*	943.081	194.258	208.326	262.077	0.000	262.077	268.131	265.581	242.029	250.546	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	943.081	194.258	208.326	262.077	0.000	262.077	268.131	265.581	242.029	250.546	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**943.081**	**194.258**	**208.326**	**262.077**	**0.000**	**262.077**	**268.131**	**265.581**	**242.029**	**250.546**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	4.447	3.766	3.029	-	3.029	2.925	4.169	4.366	4.420	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship Missile Support Equipment provides procurement and installation support to address fleet requirements for AEGIS Weapons System, Ships Self Defense System (SSDS), Vertical Launch Systems (VLS), NATO SEASPARROW Surface Missile System (NSSMS) , Rolling Airframe Missile (RAM) Guided Missile Launcher System (GMLS), Anti-Ship Missile Decoy System NULKA, Over The Horizon Weapon System (OTH WS), and MK57 Vertical Launching System (VLS) Support Equipment. Below are program descriptions for each of these programs along with top line funding summaries.

[P40A / NATO SEASPARROW]: [P40A / NATO SEASPARROW]: The NATO SEASPARROW Surface Missile System (NSSMS) is a shipboard Self-Defense Missile System. In addition to the standard mission of Anti-Air and Anti-Surface Defense (AAW, ASUW), NSSMS is designed to protect ship and crew from a variety of inbound threats, including Anti-Ship Cruise Missiles (ASCM), Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC), Low Velocity Air Threats (LVAT), and a wide range of asymmetrical threats (e.g. Unmanned Aerial and Surface vehicles, small Rigid Hull Inflatable Boats, etc.).

The legacy NSSMS configuration consists of Fire Control and Launcher Systems comprised of 2-4 Directors, a distributed computing network, Transmitter Group, 3-5 Operating Consoles, and 1-2 Eight-Cell missile Launchers (Mk 29) which employ the surface launch variant of the Sparrow and ESSM. NSSMS MK 57 Mods 12 and higher are ESSM capable and are integrated with SSDS. In the Mod 12 and higher configuration, the MK 57 NSSMS becomes part of the SSDS MK 2 Combat System. This fully integrated configuration of the NSSMS is internally dubbed "Objective Configuration". At present, activities are focused on upgrading legacy systems (NSSMS Mk 57 Mod 2) to the Mod 12-15. Efforts are also underway to develop and field MK 29 launcher modifications that enable the firing of ESSM BLK 2 from NSSMs platforms. The BLK 2 associated changes include modifications to mechanical interfaces to enable safe loading, stowage and firing of up to eight ESSM BLK 2 missiles.

Funding provides for (1) equipment modernization to address obsolescence, (2) NATO SEASPARROW Objective Configuration (OC) program consisting of segmenting and automating NSSMS MK 57 and interfacing directly to the SSDS Combat System (Currently planned for the LHD 1 - LHD 6), (3) Launcher Min-Mod program which delivers necessary hardware modifications to the Mk29 launcher to enable firing of ESSM BLK 2 (Currently planned on the LHD 2-6 and CVN Class ships), and (4) Continued support for Stalker Long Range Electro-Optic Sensor System. (4) Procurement of replacement Solid State Transmitters (SSTX) to address outstanding obsolescence and increase power output to pace with emergent threats.

MK 29 modernization efforts address a variety of issues with the legacy MK 132 above deck launcher equipment, including achieving the desired Grade A shock qualification, solving missile loading/loader beam safety issues, missile environmental issues and future ESSM compatibility.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support 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		

Improved Stalker (I-Stalker) will provide incremental improvements to the currently fielded Stalker Long Range Electro-Optic Sensor System (SLREOSS) in response to a 2016 United States Fleet Forces Command (USFFC) Operational Needs Statement (ONS). SLREOSS was developed as a modular, portable, form/fit replacement for the NATO Sea Sparrow Missile System (NSSMS) MK 6 Low Light Level Television (LLLTV) in response to the 2010 Naval Forces Central Command (NAVCENT) Counter Swarm Urgent Operational Need (UON) to combat Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC). It is currently being fielded in either the NSSMS MK6 MOD 3 LLLTV Director Mount configuration or NSSMS MK6 MOD 4 LLLTV Independent Mount configuration depending on platform specifications. I-Stalker will provide required upgrades to the SLREOSS Independent Mount configuration with the enhanced capabilities provided by the Navy owned Situational Awareness System (SAwS) to deliver an integrated radar and electro-optic/Infrared control and display suite. I-Stalker includes two (2) NSSMS MK6 MOD 4 LLLTV Independent Mount systems and one (1) SAwS. This combined system is referred to as the AN/SAY-3.

[P40A - 2 / RAM GMLS]: Rolling Airframe Missile (RAM) - MK 49 Guided Missile Launching System (GMLS): RAM is a cooperative program with the Federal Republic of Germany, produced under a series of production Memorandum of Understandings, the latest amended 30 July 2019 between the U.S. and the Federal Republic of Germany.

The MK-31 Guided Missile Weapon System (GMWS) is a lightweight, quick-reaction, high firepower missile system designed to provide anti-ship missile defense. The system is comprised of a MK-44 Guided Missile Round Pack (GMRP) and the MK 49 GMLS, which holds 21 RAM missiles. The 21-round launcher is compatible with various platforms ranging from large USN aircraft carriers to Littoral Combat Ship (LCS). This system is designed to counter high-density anti-ship, cruise missile raids and provide for ship survivability with accurate terminal guidance, proven lethality and no fire control illumination dependence.

Funding profile directly supports final installations and associated efforts of RAM Mod 3 upgrades on LSD class ships in accordance with ships installation/availability schedule. Installation funding includes DSA planning and actual installation costs. Without this upgrade the Ship Self Defense System (SSDS) on these ships will only be able to fire RAM in manual mode.

Funding also supports the procurement and installation of ORDALTs that address obsolescence and include the Blk 2B Firepower capability. The Firepower capability increases the number of RAM Block 2B missiles fired to meet self-defense probability of raid annihilation (PRA) requirements against evolving threat raid scenarios. Without this ORDALT, RAM will not maintain launcher readiness due to obsolescence in the current configuration, as replacement components are not procurable. In addition, without the firepower capability RAM equipped ships will not be able to defend against emergent raid scenarios. The firepower ORDALT and associated software enables full use of the RAM Block 2B missile against raids.

[P40A - 3 / Ship Self Defense System]: The Ship Self Defense System (SSDS) is the core combat system control element for the Quick Reaction Combat Capability (QRCC) in aircraft carriers and amphibious assault ships, which defends against Anti-Ship Cruise Missiles (ASCM).

Major changes from the 2020 to the 2021 President's Budget request are below:

In FY20, the SSDS Program Office is procuring 4 TI-16 H/W ship sets (1 LPD, 1 LHD, 1 LSD and 1 CVN), 1 Shore Site, and Cyber Security hardware. The Program is installing 2 Ship systems and 1 Shoresite system and doing Advanced Planning for 5 future Ship installations. In FY21 the program is procuring 1 LHD shipset, 2 shore site systems, Cyber Security hardware and CAC2S hardware. The Program is installing 4 Ship systems and 1 Shoresite system and doing Advanced Planning for 5 future Ship installations and 2 future Shoresite installations.

Starting in FY19, the SSDS TI-16 H/W cost has been consistently increasing. Price increases are reflected in the FY21-FY25 H/W costs. This is primarily due to the initial draft estimates conducted without a completed Technical Data Package (TDP) and Hardware (H/W) Design. In addition, increased cost attributed to implementation of required engineering changes to address hardware component changes and diminishing manufacturing sourcing issues.

Ship Installation Cost, which includes advanced planning, will vary per year depending on the quantities of ships and the mix of ship classes (i.e., CVN, LHD, LHA, LPD, or LSD). Installation cost is significantly higher than advanced planning. This can cause large variations between years. Variation in Ship Schedules can also drive changes per year. Recently, the installation cost has been increasing due to a) installations in non-traditional locations (e.g., Bremerton) driven by the Coast-wide bid process which causes extensive travel costs, b) Delays in delivery of Ship Installation Drawings, and c) scope changes during the modernization window. Further apparent cost "increases" are due to aligning modernization-related work such as Combat System documentation updates within the modernization budget.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support 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		

In FY20, the SSDS Program Office is now conducting 2 CSSQT's (LHD, LPD) and Advanced Planning for 2 ships due to the SSDS program receiving a $5.002 million congressional mark for Ship Self Defense System Ship Qual Trial (CSSQT) unjustified growth. This has resulted in the cancellation of one (LSD) of the originally planned 3 CSSQTs and deferment of advanced planning for 3 of the originally planned 5 future CSSQT events.

In FY21, 3 CSSQTs (1 LHD, 1 LPD, 1 LSD) are planned to be conducted and Advanced Planning for 3 ships (1 LHD, 1LPD, 1 CVN) will be accomplished.

CSSQT cost per year will vary depending on the quantities of ships conducting advance planning or CSSQT execution. The cost also varies depending on the mix of ship classes (i.e., CVN, LHD, LHA, LPD, or LSD) in any given year. The funding profile for CSSQT is weighted towards the latter part of the period because execution costs are significantly higher than advanced planning. Depending upon ships' schedules, this can cause large variations between years. In addition, the cost for each CSSQT is continually increasing primarily because of the following: increases in cost for services, increases in range costs (100%) and recently imposed funding requirements to pay for Target Emitter Packages.

In FY20, the SSDS program received a $1.338 million congressional reduction for SSDS COTS Conversion Kits budget request discrepancy. This has reduced efforts associated and introduced risk for Installation advanced planning/DSA efforts for 5 installations (1 LPD, 2 LHDs, 1 LSD and 1 CVN).

SSDS Description:
SSDS integrates a diverse set of fire control loop sensors and weapons, and C4I systems for each ship class (CVN68, CVN78, LHA6, LHD1, LPD17, LSD41 and LSD49 ship classes). SSDS MK 2 provides the capabilities for integrated air and missile defense, multi-warfare situational awareness, combat direction, and joint interoperability via the Cooperative Engagement Capability (CEC) and Tactical Digital Information Link (TADIL)-J (Link 16).

SSDS MK2 being fielded with the new construction carriers (CVN78 class) and amphibious ships (LHA6, LPD17 classes). SSDS MK2 is replacing the Advanced Combat Direction System (ACDS) in the LHD1 class, and SSDS MK1 in the LSD 41, LSD 49 class, as fleet modernization initiatives. SSDS MK2 integrates new combat system warfighting capabilities and improvements on a phased basis via Advanced Capability Builds (ACB), Technology Insertion (TI), the Fire Control Loop Improvement Project (FCLIP), Far-Term Interoperability Improvement Project (FTIIP), and Task Force Cyber Awakening (TFCA) Boundary Defense Capability.

New hardware Technology Insertion (TI) baselines are required every three to four years to refresh the Commercial-Off-The-Shelf (COTS) configurations and to sustain system production and support the incorporation of new ACB/war-fighting capabilities (FY18-20: TI-16 / FY21-25: TI-Next). Each individual ship planned for a Technology Insertion (TI) upgrade on an eight to ten year interval to replace obsolescent COTS hardware, implement new technologies and support the fielding of these capabilities. Technology refresh of individual COTS components that are unprocurable or unsupported handled on a case-by-case basis.

SHIP SELF DEFENSE SYSTEM (SSDS) MK 2 provides Advance Combat Direction System (ACDS) functionality and SSDS MK1 capabilities with additional weapon and sensor elements. SSDS integrated with Cooperative Engagement Capability (CEC) and tactical data links to provide joint interoperability for Aircraft Carriers and Amphibious Assault Ships. It provides enhanced capabilities for Force Protection against air, surface, and subsurface threats using both own-ship and remote data in support of the Anti-Air Warfare (AAW) Capstone Requirements.

SSDS MK 2 increases operational capabilities, improves combat readiness and Strike Group and Expeditionary Strike Group interoperability. SSDS MK 2 equips back-fit LHDs and CVNs with an upgraded Combat System Display, Automatic Status Board (ASTABS), Remote ASTAB Controllers, peripheral control stations and Advanced Sensor Distribution System (ASDS), as well as, the SSDS MK 2 computing equipment.

Prior year procurement of SSDS MK 2 equipment included shore-based SSDS MK 2 equipment and full combat system suites for the Ship Combat Systems Center (SCSC), Wallops Island, Virginia; maintenance and operator training equipment at the Center for Surface Combat Systems (CSCS), Dam Neck, Virginia; and an equipment suite for the Self Defense Test Ship (SDTS), the SSDS MK2 System Integration Lab (SIL), Raytheon IDS, San Diego, and the Integrated Combat System Test Facility (ICSTF), at Naval Surface Warfare Center Dahlgren.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support 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		

SSDS is currently procuring TI-16 H/W Kits. Due to prior year budget constraints, the TI-16 hardware development, production, and associated ACB-12 software migration was delayed. In order to support critical ship Combat System (CS) modernization installation schedules involving many other CS elements, production of the TI-12 configuration extends up to FY19 with Technology refresh of un-procurable components (designated TI-12H). FY17-20 transitioned to the TI-16 configuration with procurement for shore sites starting in FY17 and FY18, and procurement for ships starting in FY18 (SCN) and FY19 (OPN). FY22-25 transitions to the TI-Next configuration with procurement for shore sites starting in FY22. The budget cost estimates for the procurement and installation of the kits varies depending on the specific ship class (CVNs, LPDs, LSDs, LHAs, and LHDs), and the existing configuration of the ship or shore site.

The cost estimates for individual COTS conversion kits and their associated installation costs are included in the footnotes of exhibit P3A (for UQ005B). For FY20-21, (UQ005) includes procurement of Cyber Security Equipment in support of fielding of Cyber Security capabilities as part of SSDS MK 2 Ship Modernization and CAC2S in FY21.

P40A exhibits for SSDS includes the following:

UQ002 - Production engineering support for SSDS hardware.

UQ003 - Engineering Change Proposal (ECP) and Ship Change Document (SCD) for SSDS hardware.

UQ004 - Training Documentation Changes for SSDS hardware.

UQ005A/B/C - COTS engineering / Obsolescence Kits/Field Changes for SSDS hardware.

UQ005A - COTS engineering support for SSDS hardware at headquarters and field activities.

UQ005B - SSDS hardware procurement, installation documentation, and drawing specification of the defined SSDS COTS Conversion kits, dependent upon the shipboard or shore-site equipment configuration.

UQ005C - Cyber Security and starting in FY21 CAC2S efforts

UQ5IN FMP SHIP UNITS - The costs for each kit listed in the P-3a Description. SSDS kit funding provided to various contractors and field activities. The SSDS equipment procurement based on competitive contracts. Production lead-time for kits ranges from 12 months (for equipment COTS upgrade kits/field changes) up to 24 months for system COTS conversion kits for ships and shore sites.

UQ6IN Non FMP Shore Site UNITS -The non-FMP kits are required for SSDS/CS shore sites: The SSDS MK 2 System/Software Platform System Engineering Agent; Combat System Engineering Agent; SCSC Wallops Island; CS Integration/Engineering test facility; NSWC Dahlgren CS software certification facility; and crew SSDS maintenance training facilities. Each of these facilities require equipment to support the in-service ship configurations, and to support the new configuration baselines in development.

UQ007 - Combat System Ship Qualification Trial (CSSQT).
Combat System Ship Qualification Trials (CSSQTs) designated for CVNs and AMPHIBs in accordance with NAVSEAINST 9093.1C. CSSQTs will validate installation and performance of Combat System (CS) upgrades, and will ensure crew can operate and maintain the new systems. The execution phase of CSSQT is required to verify/validate CS performance and to qualify the ship and ships forces ability to properly operate and maintain the upgraded ship in an at-sea, Surface Warfare (SUW) and Anti-Air Warfare (AAW) environment. The cost vary per year based on the number of events, the number of ships requiring advanced Planning efforts and the mix of Ship Classes/configurations (LPD-CS with RAM/MK46, LSD-CS with RAM/CIWS. CVN/LHA/LHD-CS with RAM/ESSM/CIWS.

UQ008 - Combat System Documentation & Waterfront Support
Includes all CVN and Amphibious Class Ships that will undergo Combat System SSDS MK 2 upgrades within the next 2 years as well as all ships undergoing modernization. This provides for generation, update, and validation of CS documentation because of CS configuration changes during ship modernization. This includes the following:

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support 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		

Ship Selected Records (SSRs) for CVN, LHD, LHA, LPD and LSD Class Ships.

Combat System Operations Sequencing System (CSOSS) - Provides detailed, ship specific procedures to configure the CS for tactical operations, training and casualty reconfiguration.

Capabilities and Limitations (C&L) - provides ship CS AAW and SUW capabilities and limitations tailored to the specific ship CS configuration.

Combat System Interface Diagrams (CSID) - Provide essential information for troubleshooting CS inter-systems casualties.

Combat System Alignment Manual (CSAM) - provides detailed test and alignment procedures for a specific ship. CSAM is used to ensure that all sensors, weapons, navigation and the Landing Indicator Systems are optically, mechanically, and electronically aligned to the ship's Alignment Reference plane.

Overall CS Operability Test (OCSOT) - is a CS test from Detect through Engage to demonstrate material condition readiness of the integrated CS. Support includes planning with Ship Program Manager (SPM) for CS modernization across CVN and Amphibious class ships, headquarter's support, and liaison with local Regional Maintenance Centers (RMC), CS Waterfront Engineers, and NSWC PHD support for Installation Coordination Teams.

[P40A - 4 / AEGIS Support Equipment]: Provides equipment procurement and installation support for AEGIS Shore Facilities and Shipboard Upgrades to AEGIS Cruisers and Destroyers required to maintain the readiness of the AEGIS Weapon System in support of Combatant Commanders requirements.
L7001: Provides funding to procure and maintain special test equipment (Adaptive Diagnostic Electronic Portable Test Set(ADEPT)/Radiation Probes) to support Maintenance and Troubleshooting efforts for the AEGIS Weapon System on Deployed Units and Critical shore sites.
L7003: Provides funding to procure and maintain Integrated Warfare Systems Laboratory (IWSL) Weapons System and support infrastructure to support fleet issues resolution within the AEGIS Weapon System.
L7006: Provides funding to procure and maintain SCSC Weapons and Combat systems and support infrastructure to support fleet training requirements and integration and test efforts required to complete Weapon and Combat System Certification.
L7007: Provides funding to procure and maintain ATRC Weapons and Combat systems and support infrastructure to support fleet training requirements for the AEGIS Weapon System.
L7011: Provides funding to address fleet hardware issues related to equipment obsolescence, high failure, or to reduce maintenance costs and improve the readiness of the AEGIS Fleet.
L7012: Provides SPY 1D/DV radar enhancements for AEGIS DDGs to improve radar reliability
L7014: Provides Radar Refurbishment to support AEGIS DDG 53-78 in support of AEGIS BL 5.3 Update
L7015: AEGIS Integration and Installation support for 4 DDG to receive SEARAM upgrade
L7016: AEGIS TI-12H Backfit
L7600: Provides funding to complete installation of ORDALTS and other Ship Changes designed to improve the readiness of the AEGIS Combat System.

[P40A - 5 / MK57 SUPPORT EQUIPMENT]: The MK 57 Vertical Launch System (VLS) is unique to the DDG 1000 class. Each ship has 80 total cells grouped into 20 four-cell modules. Flight 1 missiles to be carried on DDG 1000 include: Enhanced Sea Sparrow Missile (ESSM), Standard Missile-2 (SM-2) Blk III, Tomahawk Land Attack Missile (TLAM) Blk III/IV, and Vertical Launch ASROC (VLA). This 80-cell VLS design requires a Canister Electronic Unit (CEU) for each cell containing a missile and the CEU configuration must match the missile type for ship-fill quantities of SM-2, ESSM, TLAM, and VLA. Without additional CEUs for the ZUMWALT Class, DDG 1001 and DDG 1002 will not be able to load and launch missiles in the MK 57 VLS to provide an Anti-Air Warfare (AAW), self-defense, full land attack and Anti-Submarine Warfare (ASW) capability.

MK57 VLS CEU procurement will fund 40 Tomahawk, 27 SM-2, 8 ESSM, and 5 VLA (80 per ship) supporting DDG 1000, DDG 1001, and DDG 1002. There will be an additional 46 CEUs procured as spares. Support equipment costs include Spares, hardware/software, technical refresh, Installation and Checkout (INCO) material, testing requirements, logistics, obsolescence, and training requirements.

[P40A - 5 / MK57 UCEU PRODUCTION ENGINEERING and LOGISTICS SUPPORT]: MK57 VERTICAL LAUNCH SYSTEM (VLS) UNIVERSAL CANISTER ELECTRONICS UNIT(UCEU) PRODUCTION ENGINEERING and LOGISTICS SUPPORT: Funds provided for systems engineering, testing, engineering changes, cyber security accreditation, installation, production support, and hardware. This funding line

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support 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		

also provides for development of training curriculum, depot repair procedures, and logistics required to maintain compatibility and interoperability with Total Ship Computing Environment (TSCE) combat system on DDG1000 Class.

MK57 VERTICAL LAUNCH SYSTEM (VLS) UCEU HARDWARE PROCUREMENT: The Independent Government Cost Estimate (IGCE) for MK57 UCEU is ~$160K per unit times QTY 240 UCEUs (additional QTY 36 spares will be procured if funded). Without procurement of the UCEU for the ZUMWALT Class, DDG 1000, DDG 1001, and DDG 1002 will not be able to launch all available missile types in the VLS inventory to provide an Anti-Air Warfare (AAW), self-defense, full land attack and Anti-Submarine Warfare (ASW) capability.

[P40A - 6 / Vertical Launch Systems]: The MK-41 Vertical Launching System (VLS) is a surface combatant missile launching system, designed to store, select and launch various STANDARD Missile configurations, TOMAHAWK, Tactical TOMAHAWK, EVOLVED SEASPARROW (ESSM) and Vertical Launch ASROC (Anti Submarine ROCket) (VLA) missiles. The MK-41 VLS significantly improves missile capacity, flexibility, multi-mission capability, reaction time and rate of fire and is designed to be adaptable to present and future weapon systems. Current configurations are: two 61 cell launchers, forward and aft, for 22 TICONDEROGA (CG 47) Class Cruisers beginning with CG-52; one 61 cell aft and one 29 cell launcher forward for 28 ARLEIGH BURKE (DDG 51) Class Destroyers; and one 64 cell launcher aft and one 32 cell launcher forward for 34 DDG 51 FLT IIA ships.

The OPN requirements procure Engineering Change Proposals/Ordnance Alterations (ECP/ORDALT) and funds sustaining engineering support for Fleet investigations and safety issues. Funds are required for Fleet operational availability, capability, safety and survivability. There are no significant increases or decreases in this program.

[P40A - 7 / ANTI SHIP MISSILE DECOY SYSTEM]: Funding is being realigned to BLI 5530 starting in FY20. The last DLS will be procured under BLI 5530.

The Anti-Ship Missile Decoy Program covers a family of decoys and the equipment to deploy them. It is an essential element of the Anti-Ship Missile Defense tactics to counter the threat of enemy homing missiles. NULKA is a joint program with Australia, and is currently in service with the Australian, Canadian, and United States Navies. NULKA consists of the Decoy Launching System (DLS) (MK 53) and Offboard Active Decoy (MK 234). This line contains various equipment and subsystems for a system which will provide the capability to defeat the effectiveness of hostile Anti-Ship cruise missiles. The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies, and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the Electronic Warfare (EW) operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. The first DLS for CVNs was procured under the previous OPN budget (BLI 5530). Six of the final seven are being procured under this budget.

The Advanced Decoy Architecture Project (ADAP) is EW payload developed under an Office of Naval Research (ONR) program that targets specific threats that the current payload on the Nulka decoy does not. The ADAP payload provides an advanced EW transmitter and increased signal processing capability.

[P40A - 8 / OTH PROCUREMENT]: The Over The Horizon Weapon System (OTH WS) provides the Littoral Combat Ship/Frigate (LCS/FF) with long range anti-surface offensive capability against the full range of surface combatants (Fast Attack Craft to Capital Warships). The OTH WS consists of a Missile Launch System and a complement of missiles. Missile Launch System components include a Launch Mechanism, Operator Interface, and Fire Control System.

Overall increase from FY 2021-2025 for OTH WS funding due to realignment of funding from LCS OPN 1604 into OTH OPN 5231 to consolidate program funding into one line (Issue 19039, LCS OTH System Transfer). FY 2021 funds will be used to procure 4 shipsets (4 Fire Control Suites and 8 Launch Mechanisms), an increase from 2 shipsets in FY 2020.

[P40A - 8 / OTH SUPPORT]: Increase in OTH WS support required from FY 2020 to FY 2021 due to ramp-up in OTH WS procurement. Funding includes procurement of installation and check-out (INCO) equipment.

[P40A - 8 / OTH WS INSTALLATION]: Provides funding for the installation of the Over The Horizon Weapon System (OTH WS) onto Littoral Combat Ship (LCS) Class ships. Increase in OTH WS installation required from FY 2020 to FY 2021 due to start of installation activities from delivery of FY 2019 shipset.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment

P-1 Line Item Number / Title:
5231 / Ship Missile Support 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) / ($ 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	NATO SEASPARROW	P-5a			- / 99.088	- / 33.987	- / 19.523	- / 18.158	- / -	- / 18.158
P-40a	RAM GMLS				- / 12.822	- / 6.070	- / 2.757	- / 2.727	- / -	- / 2.727
P-40a	Ship Self Defense System				- / 38.370	- / 13.385	- / 18.305	- / 22.367	- / -	- / 22.367
P-40a	AEGIS Support Equipment				- / 386.523	- / 28.692	- / 81.922	- / 96.828	- / -	- / 96.828
P-40a	MK57 SUPPORT EQUIPMENT	P-5a, P-21			- / 0.000	- / -	- / -	- / 17.244	- / -	- / 17.244
P-40a	Vertical Launch Systems				- / 2.718	- / 0.619	- / 0.682	- / 0.687	- / -	- / 0.687
P-40a	ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / 145.590	- / 19.387	- / -	- / -	- / -	- / -
P-40a	OTH Weapon System				- / 0.000	- / 2.874	- / 1.800	- / 5.017	- / -	- / 5.017
P-3a	1 / NATO SEASPARROW (NSSMS Mk 57)				- / 39.798	- / 6.488	- / 13.002	- / 19.679	- / 0.000	- / 19.679
P-3a	2 / UR006 RAM MK-49 GMLS ORDALTS (NON-FMP Install)				- / 17.305	- / 3.688	- / 4.707	- / 7.203	- / 0.000	- / 7.203
P-3a	3 / UQ005B - SSDS COTS CONVERSION KITS (TBD)				- / 162.868	- / 70.613	- / 65.628	- / 72.167	- / 0.000	- / 72.167
P-3a	4 / VV001 NULKA SYSTEMS (TBD)				- / 37.999	- / 8.455	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	**Total Gross/Weapon System Cost**				**- / 943.081**	**- / 194.258**	**- / 208.326**	**- / 262.077**	**- / 0.000**	**- / 262.077**

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	NATO SEASPARROW	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	RAM GMLS				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Ship Self Defense System				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	AEGIS Support Equipment				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	MK57 SUPPORT EQUIPMENT	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Vertical Launch Systems				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	OTH Weapon System				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / NATO SEASPARROW (NSSMS Mk 57)				- / 21.782	- / 22.171	- / 22.783	- / 22.652	- / 8.146	- / 176.501
P-3a	2 / UR006 RAM MK-49 GMLS ORDALTS (NON-FMP Install)				- / 6.840	- / 6.105	- / 6.456	- / 6.835	- / 75.294	- / 134.433
P-3a	3 / UQ005B - SSDS COTS CONVERSION KITS (TBD)				- / 73.134	- / 72.358	- / 63.464	- / 71.401	- / 2.550	- / 654.183
P-3a	4 / VV001 NULKA SYSTEMS (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.001	- / 46.455
P-40	**Total Gross/Weapon System Cost**				**- / 268.131**	**- / 265.581**	**- / 242.029**	**- / 250.546**	**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 / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Aggregated Items Title: NATO SEASPARROW

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) EQUIPMENT MODERNIZATION - US005																				
1.1) Objective Configuration Engineering (1)	A		-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) MISSILE LAUNCHER UPGRADE (2)	A		-	-	44.177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) PRODUCTION SUPPORT (3)	A		-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) LHD UPGRADE (4)	A		-	-	18.346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Mk57 Mod 12-15 Modernization (5)	A		-	-	11.551	-	-	12.412	-	-	10.083	-	-	10.879	-	-	-	-	-	10.879
1.7) Launcher Min-Mod BLK 2 Capability H/W (6)	A		-	-	1.500	-	-	2.500	-	-	2.000	-	-	-	-	-	-	-	-	-
1.8) CVN/ LHA Objective Configuration Engineering Upgrade (7)	A		-	-	-	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) EQUIPMENT MODERNIZATION - US005			**-**	**-**	***90.074***	**-**	**-**	***17.412***	**-**	**-**	***12.083***	**-**	**-**	***10.879***	**-**	**-**	**-**	**-**	**-**	***10.879***
2) STALKER - US005																				
2.1) STALKER PRODUCTION SUPPORT	A		-	-	2.035	-	-	0.210	-	-	0.215	-	-	0.190	-	-	-	-	-	0.190
Subtotal: 2) STALKER - US005			**-**	**-**	***2.035***	**-**	**-**	***0.210***	**-**	**-**	***0.215***	**-**	**-**	***0.190***	**-**	**-**	**-**	**-**	**-**	***0.190***
3) I-Stalker - US005 (8)																				
3.1) I-Stalker Gimbal/ SAwS (9)(†)	A		551,000.00	10	5.510	500,000.00	11	5.500	513,000.00	1	0.513	515,000.00	3	1.545	-	-	-	515,000.00	3	1.545
3.2) I-Stalker Support Equipment (10)(†)	A		-	-	-	160,000.00	6	0.960	-	-	-	-	-	-	-	-	-	-	-	-
3.3) I-Stalker Sensor Suite	A		-	-	-	750,000.00	6	4.500	-	-	-	-	-	-	-	-	-	-	-	-
3.4) I-Stalker Install	A		-	-	0.569	-	-	4.865	-	-	6.528	-	-	5.169	-	-	-	-	-	5.169
3.5) I-Stalker SAwS	A		180,000.00	5	0.900	180,000.00	3	0.540	184,000.00	1	0.184	187,500.00	2	0.375	-	-	-	187,500.00	2	0.375
Subtotal: 3) I-Stalker - US005			**-**	**-**	***6.979***	**-**	**-**	***16.365***	**-**	**-**	***7.225***	**-**	**-**	***7.089***	**-**	**-**	**-**	**-**	**-**	***7.089***
Total			**-**	**-**	**99.088**	**-**	**-**	**33.987**	**-**	**-**	**19.523**	**-**	**-**	**18.158**	**-**	**-**	**-**	**-**	**-**	**18.158**

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-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** NATO SEASPARROW

Footnotes:

(1) The Objective Configuration Engineering line funded the requirements for the NSSMS MK 57 Mod 14 (Objective Configuration) for LHD 1 Class ships. The design was completed in FY 15 and no additional funding was placed on this line.

(2) The Missile Launcher Upgrade (MLU) program, that would have provided a launcher capable of launching an ESSM Blk 2, has been placed on indefinite hold. The solicitation for the launcher upgrade development contract was cancelled because a fair and reasonable price with Raytheon could not be reached; however the requirement to deliver a launcher capable of launching an ESSM Blk 2 still exists. The Navy is pursuing a minimum modification approach for fielding this launcher upgrade to meet schedule requirements. The MLU line was zeroed out in FY 17/18. A new line, 1.7) Launcher Min-Mod to BLK 2, has replaced the MLU line.

(3) The Production Support Line has been zeroed out to better streamline the funding requirements. This funding has been rolled up in the Objective Configuration line on the P3A to support the current program baseline.

(4) This funding line provides the hands on labor required to deliver an Objective Configuration system to the LHD 1 Class ships. To reflect the true cost of an Objective Configuration System this funding has been incorporated into the hardware costs on the P3A. A full up ship cost is now being used in the P3A. This funding has been zeroed out.

(5) The title of this line has been changed from Objective Configuration to Mk57 Mod 12-15 Modernization. The title Objective Configuration caused confusion in that it was assumed this funding was upgrade support for production of the NSSMS Mk57 Mod 14 Objective Configuration (OC) system. Funding in this line provides for field activity and industry support for all efforts associated with the Mk57 Mods 12-15 system.

(6) This Launcher Min-Mod BLK 2 Capability Upgrade line replaces the Missile Launcher Upgrade line. With the Missile Launcher Upgrade program being placed on indefinite hold this provides funding for a minimum modification approach for fielding a launcher capable of launching a ESSM Blk 2 missile. Two installations per year starting in FY 21 are planned for a total of 10 ships to receive the Min-Mod upgrade.

(7) This line provided funding for Objective Configuration Engineering Upgrade support for the NSSMS MK 57 Mods 14/15 on CVN/LHA ships. This effort consists mainly of Alteration Installation Team (AIT) efforts to remove the Q70s and install new cables and updated software. No additional engineering funding is required after 2019 since installation on the first ship is almost complete and all issues have been addressed.

(8) I Stalker is composed of 3.1 I-Stalker Gimbal/SawS Mount, 3.2 I-Stalker Support Equipment and 3.3 I-Stalker Sensor Suite. In the FY 2020 President's Budget request, these components were all included in 3.1 I-Stalker Kits; the FY 2021 President's Budget request exhibit shows the hardware requirement at the component level. Prior to FY20, the USN was procuring only 3.1 I-Stalker Gimbal / SawS mounts as there were sufficient stocks of GFE for 3.2 I-Stalker Support Equipment and 3.3 I-Stalker Sensor Suites. Beginning with FY20, the budget exhibit reflects the requirements to procure 3.2 and 3.3 components. 3.1 unit cost has been updated based on the FY18 and FY19 I-Stalker Gimbal contract actuals.

(9) FY19 increased $6.138M since the FY 2020 President's Budget request to address installation cost increases on CVN class ships, and procure hardware to support installation of iStalker on LHA and LHD class ships in accordance with USN UONS requirements.

(10) FY20 equipment reduced from the FY 2020 to the FY 2021 President's Budget request due to reduction of $1.460M. Hardware requirement reduced since the FY 2020 President's Budget request due to changes in Fleet LHA and LHD installation schedules and increases in CVN 68 installation costs. This resulted in funds being moved from hardware to installations to address the increase in installation funding requirements.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Aggregated Items: NATO SEASPARROW

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) I-Stalker - US005												
3.1) I-Stalker Gimbal/SAwS (9)		2018	BALL / Westminister, CO	SS / FFP	NSWC Crane	Sep 2018	Jul 2019	10	551,000.00	Y		Nov 2017
3.1) I-Stalker Gimbal/SAwS (9)		2019	BALL / Westminister, CO	SS / FFP	NSWC Crane	Dec 2018	Dec 2019	11	500,000.00	Y		Nov 2017
3.1) I-Stalker Gimbal/SAwS (9)		2020	TBD / TBD	C / FFP	NSWC Crane	May 2020	Jun 2021	1	513,000.00	Y		Jun 2019
3.1) I-Stalker Gimbal/SAwS (9)		2021	TBD / TBD	C / FFP	NSWC Crane	Dec 2020	Dec 2021	3	515,000.00	Y		Jun 2019
3.2) I-Stalker Support Equipment (10)		2019	TBD / TBD	C / TBD	** NO PCO **	Oct 2018	Oct 2018	6	160,000.00	N		

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** RAM GMLS (11)

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) UR006 RAM MK-49 GMLS ORDALTS (12)																				
1.1) UR006 RAM MK-49 GMLS ORDALTS	A		-	-	7.188	-	-	5.865	-	-	2.757	-	-	2.727	-	-	-	-	-	2.727
Subtotal: 1) UR006 RAM MK-49 GMLS ORDALTS			**-**	**-**	***7.188***	**-**	**-**	***5.865***	**-**	**-**	***2.757***	**-**	**-**	***2.727***	**-**	**-**	**-**	**-**	**-**	***2.727***
2) UR901 Systems Improvements (13)																				
2.1) UR901 System Improvement	A		-	-	5.634	-	-	0.205	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) UR901 Systems Improvements			**-**	**-**	***5.634***	**-**	**-**	***0.205***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**12.822**	**-**	**-**	**6.070**	**-**	**-**	**2.757**	**-**	**-**	**2.727**	**-**	**-**	**-**	**-**	**-**	**2.727**

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

Footnotes:

(11) NSWC Port Hueneme provides installation oversight support as the In-Service Engineering Activity (ISEA) for the RAM GMLS system.

(12) These funds provide for GMLS production support, systems engineering, logistics, Ship Change Designs (SCD), Engineering Change Proposals (ECP), ship drawings for ORDALT instructions as well as information assurance (IA) compliance and safety and Interactive Electronic Technical Manuals (IETM). Funding increased in FY18-FY21 to support RAM Blk 2B Firepower ORDALTS to meet self defense PRA requirements against evolving threat raid scenarios and development and fielding of associated software.

(13) Provides for procurement and installation of critical RAM system improvement and safety ORDALTs

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** Ship Self Defense 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) Ship Self Defense System (SSDS)																				
1.1) UQ002 - SSDS Production Support	A		-	-	6.457	-	-	1.574	-	-	1.600	-	-	1.628	-	-	-	-	-	1.628
1.2) UQ003 - SSDS ECP / SCD	A		-	-	0.788	-	-	0.205	-	-	0.209	-	-	0.212	-	-	-	-	-	0.212
1.3) UQ004 - SSDS Training	A		-	-	2.876	-	-	0.750	-	-	0.763	-	-	0.776	-	-	-	-	-	0.776
1.4) UQ005A - SSDS COTS Eng/ Obsolescence Kits	A		-	-	10.180	-	-	2.950	-	-	2.970	-	-	2.990	-	-	-	-	-	2.990
1.5) UQ007 - Combat System Ship Qualification Trial (CSSQT) (14)	A		-	-	12.957	-	-	3.971	-	-	8.973	-	-	13.669	-	-	-	-	-	13.669
1.6) UQ008 - Combat System Documentation & Support (15)	A		-	-	5.112	-	-	3.935	-	-	3.790	-	-	3.092	-	-	-	-	-	3.092
Subtotal: 1) Ship Self Defense System (SSDS)			**-**	**-**	***38.370***	**-**	**-**	***13.385***	**-**	**-**	***18.305***	**-**	**-**	***22.367***	**-**	**-**	**-**	**-**	**-**	***22.367***
Total			**-**	**-**	**38.370**	**-**	**-**	**13.385**	**-**	**-**	**18.305**	**-**	**-**	**22.367**	**-**	**-**	**-**	**-**	**-**	**22.367**

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

Footnotes:

(14) UQ007 Combat System Ship Qualification Trial (CSSQT) - In FY21, 3 CSSQTs (1 LHD, 1 LPD, 1 LSD) are planned to be conducted and Advanced Planning for 3 ships (1 LHD, 1LPD, 1 CVN) will be accomplished. FY20 now includes funding for the conduct of 2 CSSQTs (1 LPD and 1 LHD) and CSSQT Advance Planning funds for 2 ships vs the originally planned 3 CSSQTs and Advanced Planning efforts for 5 Ships due to $5.002 million congressional mark for Ship Self Defense System Ship Qual Trial (CSSQT) unjustified growth. CSSQT cost per year will vary depending on the quantities of ships conducting advance planning or CSSQT execution. The cost also varies depending on the mix of ship classes (i.e., CVN, LHD, LHA, LPD, or LSD) in any given year and the CS weapons configuration (LPD-CS with RAM/MK46, LSD-CS with RAM/CIWS, CVN/LHA/LHD-CS with RAM/ESSM/CIWS). In addition, the cost for each CSSQT is continually increasing primarily because of the following: increases in cost for services, increases in range costs (100%) and recently imposed funding requirements to pay for Target Emitter Packages. The funding profile for CSSQT is weighted towards the latter part of the period because execution costs are significantly higher than advanced planning. Depending upon ships' schedules, this can cause large variations between years.

(15) UQ008 Combat System Documentation and Support - Requirements includes all CVN and Amphibious Class Ships that will undergo Combat System SSDS MK 2 upgrades within the next 2 years as well as all ships undergoing modernization. This provides for generation, update, and validation of CS documentation because of CS configuration changes during ship modernization. This includes the following: - Ship Selected Records (SSRs) for CVN, LHD, LHA, LPD and LSD Class Ships. - Combat System Operations Sequencing System (CSOSS) - Capabilities and Limitations (C&L) - Combat System Interface Diagrams (CSID) - Combat System Alignment Manual (CSAM) - Overall CS Operability Test (OCSOT)

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** AEGIS Support Equipment (16)

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) Aegis Support Equipment																				
1.1) L7001 - Depot Special Tooling/Test Equipment	A		-	-	16.301	-	-	2.786	-	-	4.184	-	-	3.452	-	-	-	-	-	3.452
1.2) L7003 - Integrated Warfare Systems Laboratory (17)	A		-	-	1.317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) L7006 - Surface Combat Systems Center Equipment	A		-	-	113.029	-	-	4.686	-	-	3.379	-	-	3.443	-	-	-	-	-	3.443
1.4) L7007 - Aegis Training and Readiness Center Upgrade	A		-	-	61.595	-	-	3.296	-	-	2.980	-	-	3.037	-	-	-	-	-	3.037
1.5) L7011 - Aegis Weapon System Ship Change Procurement	A		-	-	56.705	-	-	9.904	-	-	10.571	-	-	7.189	-	-	-	-	-	7.189
1.6) L7012 - SPY 1D/DV Radar Enhancements (18)	A		-	-	41.172	-	-	-	-	-	17.900	-	-	22.362	-	-	-	-	-	22.362
1.7) L7014 - SPY Radar Refurbishment (19)	A		-	-	58.118	-	-	-	-	-	22.022	-	-	28.600	-	-	-	-	-	28.600
1.8) L7015 - AEGIS SEARAM Integration and Installation Support	A		-	-	-	-	-	1.400	-	-	-	-	-	7.000	-	-	-	-	-	7.000
1.9) L7016 - AEGIS TI12H Backfit (20)	A		-	-	-	-	-	-	-	-	13.800	-	-	14.100	-	-	-	-	-	14.100
1.11) L7600 - Aegis Support Equipment Installation	A		-	-	38.286	-	-	6.620	-	-	7.086	-	-	7.645	-	-	-	-	-	7.645
Subtotal: 1) Aegis Support Equipment			**-**	**-**	***386.523***	**-**	**-**	***28.692***	**-**	**-**	***81.922***	**-**	**-**	***96.828***	**-**	**-**	**-**	**-**	**-**	***96.828***
Total			**-**	**-**	**386.523**	**-**	**-**	**28.692**	**-**	**-**	**81.922**	**-**	**-**	**96.828**	**-**	**-**	**-**	**-**	**-**	**96.828**

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

Footnotes:

(16) Provides equipment procurement and installation support for AEGIS Shore Facilities and Shipboard Upgrades to AEGIS Cruisers and Destroyers required to maintain the readiness of the AEGIS Weapon System in support of Combatant Commanders requirements. Combat System Procurements: L7001: Special Tools & Test Equipment L7003: Computers, Displays, and Simulators for Integrated Warfare Systems Laboratory (IWSL) at Dahlgren, VA L7006: Weapon/Combat System Equipment for Surface Combat System Center (SCSC) at Wallops Island, VA L7007: Weapon/Combat System Equipment for AEGIS Readiness Training Center (ATRC) at Dahlgren, VA L7011: AEGIS Weapon System Procurements to support Ship Change Documents L7012: AEGIS Weapon System Procurements to support AEGIS SPY-1D/DV Enhancements for AEGIS DDGs (APLS) L7014: AEGIS Weapon System Procurements to support SPY Refurbishments

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** AEGIS Support Equipment (16)

in support of AEGIS BL 5.3.X Upgrade planned to field in FY18. L7015: AEGIS Integration and Installation support for 4 DDG to receive SEARAM upgrade L7016: AEGIS TI-12H Backfit L7027: AEGIS Software License Procurements to support Shore Facilities and In-Service Ship L7600: AEGIS Installation support for approved ship changes L7999: Congressional Rescission

(17) Eliminates procurement outfitting and maintenance of the Integrated Warfare System Laboratory (IWSL) beyond FY15

(18) SPY 1D/DV Radar Enhancements - The AEGIS Linear Processor System (ALPS) program provides the AN/SPY-1D/DV radar with AAW improvements in a complex electronic environment. ALPS provides growth capability for EMI susceptibility, electronic support measures (ESM), and barrage jamming improvements via new wideband receiver modules in an adjunct processor.

(19) Covers the Navy share for refurbishment of the Flight I and II DDG SPY-1D arrays to include the installation of Low Noise Amplifiers (LNA) to improve radar sensitivity against emerging threats. The Navy and Missile Defense Agency are each covering half the cost for these upgrades that will keep the Flight I/II DDGs relevant through the remainder of their service life.

(20) Funds the backfit of the Technology Insertion-12 Hybrid solution (TI-12H) on the baseline 9 TI-12 CGs and DDGs which enables those ships to be upgraded to AEGIS Baseline 9 Capability Packages 2020, 2021, and 2022. These baseline upgrades include significant warfighter improvements to include Laser integration, ESSM BLK II, SM-6 BLK 1B, SEWIP BLK II integration, NIFC-CA 2019, NIFC-CA Collateral III, as well as cybersecurity improvements. The Missile Defense Agency is funding half of the TI-12H backfits.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** MK57 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) MK57 Support Equipment																				
1.1) MK57 UCEU PRODUCTION ENGINEERING and LOGISTICS SUPPORT	A		-	-	-	-	-	-	-	-	-	-	-	4.644	-	-	-	-	-	4.644
1.2) MK57 UCEU HARDWARE PROCUREMENT (21)(†)	A		-	-	-	-	-	-	-	-	-	157,500.00	80	12.600	-	-	-	157,500.00	80	12.600
Subtotal: 1) MK57 Support Equipment			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***17.244***	**-**	**-**	**-**	**-**	**-**	***17.244***
Total			**-**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**17.244**	**-**	**-**	**-**	**-**	**-**	**17.244**

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:

(21) MK57 VERTICAL LAUNCH SYSTEM (VLS) UNIVERSAL CANISTER ELECTRONICS UNIT(UCEU) PRODUCTION ENGINEERING and LOGISTICS SUPPORT: Funds provided for systems engineering, testing, engineering changes, cyber security accreditation, installation, production support, and hardware. This funding line also provides for development of training curriculum, depot repair procedures, and logistics required to maintain compatibility and interoperability with Total Ship Computing Environment (TSCE) combat system on DDG1000 Class. MK57 VERTICAL LAUNCH SYSTEM (VLS) UCEU HARDWARE PROCUREMENT: The Independent Government Cost Estimate (IGCE) for MK57 UCEU is $160K per unit times QTY 240 UCEUs. Without procurement of the UCEU for the ZUMWALT Class, DDG 1000, DDG 1001, and DDG 1002 will not be able to launch all available missile types in the VLS inventory to provide an Anti-Air Warfare (AAW), self-defense, full land attack and Anti-Submarine Warfare (ASW) capability.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items:** MK57 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
1) MK57 Support Equipment												
1.2) MK57 UCEU HARDWARE PROCUREMENT (21)(†)		2021	TBD / TBD-Competition	C / TBD	NAVSEA FIELD ACTIVITY	Nov 2020	Nov 2022	80	157,500.00	N	Jun 2020	Jun 2020

(†) 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 / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items:** MK57 SUPPORT EQUIPMENT

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) MK57 Support Equipment																															
1.2) MK57 UCEU HARDWARE PROCUREMENT (21)																															
	1	2021	NAVY	80	0	80		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
							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 / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items:** MK57 SUPPORT EQUIPMENT

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) MK57 Support Equipment																															
1.2) MK57 UCEU HARDWARE PROCUREMENT [21]																															
	1	2021	NAVY	80	0	80	-	80																							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 / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items:** MK57 SUPPORT 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	TBD - TBD-Competition			TBD	0	25	0	25	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-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** Vertical Launch 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 ($)	Qty (Each)	Total Cost ($ 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) Vertical Launch Systems																				
1.1) VLS ORDALTS	A		-	-	1.736	-	-	0.438	-	-	0.447	-	-	0.452	-	-	-	-	-	0.452
1.2) VLS PRODUCTION ENGINEERING	A		-	-	0.767	-	-	0.126	-	-	0.179	-	-	0.178	-	-	-	-	-	0.178
Subtotal: 1) Vertical Launch Systems			**-**	**-**	***2.503***	**-**	**-**	***0.564***	**-**	**-**	***0.626***	**-**	**-**	***0.630***	**-**	**-**	**-**	**-**	**-**	***0.630***
2) 5A5IN Install Equipment N86 (22)																				
2.1) 5A5IN Install Equipment N86	A		-	-	0.215	-	-	0.055	-	-	0.056	-	-	0.057	-	-	-	-	-	0.057
Subtotal: 2) 5A5IN Install Equipment N86			**-**	**-**	***0.215***	**-**	**-**	***0.055***	**-**	**-**	***0.056***	**-**	**-**	***0.057***	**-**	**-**	**-**	**-**	**-**	***0.057***
Total			**-**	**-**	**2.718**	**-**	**-**	**0.619**	**-**	**-**	**0.682**	**-**	**-**	**0.687**	**-**	**-**	**-**	**-**	**-**	**0.687**

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

Footnotes:

(22) VLS ORDALT Installation

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS (23)																				
1.1) NULKA DECOYS(†)	A		1,426K	58	82.701	1,900K	7	13.300	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) VV002 - NULKA DECOYS			**-**	**-**	***82.701***	**-**	**-**	***13.300***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) VV830 - PRODUCTION ENGINEERING (24)																				
2.1) PRODUCTION ENGINEERING	A		-	-	8.953	-	-	2.089	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) VV830 - PRODUCTION ENGINEERING			**-**	**-**	***8.953***	**-**	**-**	***2.089***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
3) VV004 - ADAP PAYLOAD																				
3.1) ADAP PAYLOAD(†)	A		493,547.95	73	36.029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) VV004 - ADAP PAYLOAD			**-**	**-**	***36.029***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT (25)																				
5.1) ECPs	A		-	-	3.724	-	-	1.460	-	-	-	-	-	-	-	-	-	-	-	-
5.2) Logistics/ Production Support	A		-	-	14.183	-	-	2.538	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT			**-**	**-**	***17.907***	**-**	**-**	***3.998***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**145.590**	**-**	**-**	**19.387**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

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:

(23) VV002: Procurement of MK 234 NULKA Decoys. The FY18 unit cost ($1,236K) is based on a total procurement of 35 decoys (23 procured with 5231/OPN and 12 procured by Australia). The FY19 unit cost ($1,900K) is based on a total procurement of 19 decoys (7 procured with 5231/OPN and 12 procured by Australia).
Decrease in FY18 VV002 decoys procurement due to $17.317M Congressional Rescission.
1288 = Total number of Nulka decoys (PU: VV002) To Complete: 962 decoys procured under BLI:5530 (FY14 and prior) and 33 decoys procured under BLI:5231 (FY15-FY17).

(24) VV830: Production Engineering support to the MK 234 NULKA Decoy.

(25) VV003 - Funding will procure Engineering Change Proposals (ECPs)/ORDALT Kits to ensure future tactical suitability and viability of NULKA and to address obsolescence, quality assurance, reliability, safety, Electromagnetic Interference (EMI), and diminishing manufacturing source issues. Additionally, funding will provide for updating Logistics including decoy and special purpose test equipment maintenance, provisioning, transportation, and training school support as required.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Aggregated Items: ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS												
1.1) NULKA DECOYS(†)		2017	BAES / AUSTRALIA	C / FFP	US Embassy, Canberra	Jun 2018	Aug 2019	21	1,456K	Y		
1.1) NULKA DECOYS(†)		2018	BAES / AUSTRALIA	C / FFP	US Embassy, Canberra	Dec 2018	Feb 2020	25	1,235K	Y		
1.1) NULKA DECOYS(†)		2019	BAES / AUSTRALIA	C / FFP	US Embassy, Canberra	Dec 2018	Dec 2020	7	1,900K	Y		
3) VV004 - ADAP PAYLOAD												
3.1) ADAP PAYLOAD(†)		2016	EXELIS / NJ	C / FFP	Naval Research Lab	Apr 2016	Jun 2018	35	537,970.00	Y		
3.1) ADAP PAYLOAD(†)		2017	EXELIS / NJ	C / FFP	Naval Research Lab	Aug 2017	Nov 2019	38	452,632.00	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 / 04 / 3

P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment

Aggregated Items: ANTI SHIP MISSILE DECOY SYSTEM

Items (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
										Calendar Year 2016												Calendar Year 2017									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	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) VV002 - NULKA DECOYS																															
1.1) NULKA DECOYS																															
Prior Years Deliveries: 12																															
	2	2017	NAVY	21	0	21																									21
	2	2018	NAVY	25	0	25																									25
	2	2019	NAVY	7	0	7																									7
3) VV004 - ADAP PAYLOAD																															
3.1) ADAP PAYLOAD																															
	3	2016	NAVY	35	0	35							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
	3	2017	NAVY	38	0	38																							A -	-	38
							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 / 04 / 3

P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment

Aggregated Items: ANTI SHIP MISSILE DECOY SYSTEM

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) VV002 - NULKA DECOYS																															
1.1) NULKA DECOYS																															
Prior Years Deliveries: 12																															
	2	2017	NAVY	21	0	21									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	18
	2	2018	NAVY	25	0	25															A -	-	-	-	-	-	-	-	-	-	25
	2	2019	NAVY	7	0	7															A -	-	-	-	-	-	-	-	-	-	7
3) VV004 - ADAP PAYLOAD																															
3.1) ADAP PAYLOAD																															
	3	2016	NAVY	35	0	35	-	-	-	-	-	-	-	-	2	3	3	3	3	3	3	3	3	3	3	3					0
	3	2017	NAVY	38	0	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38
							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 / 04 / 3

P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment

Aggregated Items: ANTI SHIP MISSILE DECOY SYSTEM

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) VV002 - NULKA DECOYS																															
1.1) NULKA DECOYS																															
Prior Years Deliveries: 12																															
	2	2017	NAVY	21	3	18	2	2	2	2	1	1	2	2	2	2															0
	2	2018	NAVY	25	0	25	-	-	-	-	2	3	2	2	2	2	2	2	2	2	2	2									0
	2	2019	NAVY	7	0	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1				0
3) VV004 - ADAP PAYLOAD																															
3.1) ADAP PAYLOAD																															
	3	2016	NAVY	35	35	0																									0
	3	2017	NAVY	38	0	38	-	2	3	3	4	3	3	4	3	4	3	3	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 / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items:** ANTI SHIP MISSILE DECOY 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	BAES - AUSTRALIA			192	0	6	12	18	0	0	12	12
2	EXELIS - NJ			TBD	0	0	12	12	0	0	12	12

"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-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** OTH Weapon 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) OTH Weapon System (26)																				
1.1) OTH PROCUREMENT (27)	A		-	-	-	2,874K	1	2.874	752,581.00	2	1.505	628,302.00	4	2.513	-	-	-	628,302.00	4	2.513
1.2) OTH SUPPORT (28)	A		-	-	-	-	-	-	-	-	0.295	-	-	0.504	-	-	-	-	-	0.504
Subtotal: 1) OTH Weapon System			**-**	**-**	***0.000***	**-**	**-**	***2.874***	**-**	**-**	***1.800***	**-**	**-**	***3.017***	**-**	**-**	**-**	**-**	**-**	***3.017***
2) OTH WS INSTALLATION																				
2.1) OTH WS INSTALLATION (29)	A		-	-	-	-	-	-	-	-	-	-	-	2.000	-	-	-	-	-	2.000
Subtotal: 2) OTH WS INSTALLATION			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***2.000***	**-**	**-**	**-**	**-**	**-**	***2.000***
Total			**-**	**-**	**0.000**	**-**	**-**	**2.874**	**-**	**-**	**1.800**	**-**	**-**	**5.017**	**-**	**-**	**-**	**-**	**-**	**5.017**

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

Footnotes:

(26) Overall increase from FY 2021-2025 for OTH WS funding due to realignment of funding from LCS OPN 1604 into OTH OPN 5231 to consolidate program funding into one line (Issue 19039, LCS OTH System Transfer).

(27) FY 2021 funds will be used to procure 4 shipsets (4 Fire Control Suites and 8 Launch Mechanisms), an increase from 2 shipsets in FY 2020.

(28) Increase in OTH WS support required from FY 2020 to FY 2021 due to ramp-up in OTH WS procurement. Funding includes procurement of installation and check-out (INCO) equipment.

(29) Increase in OTH WS installation required from FY 2020 to FY 2021 due to start of installation activities from delivery of FY 2019 shipset.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
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)*	39.798	6.488	13.002	19.679	0.000	19.679	21.782	22.171	22.783	22.652	8.146	176.501
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	39.798	6.488	13.002	19.679	0.000	19.679	21.782	22.171	22.783	22.652	8.146	176.501
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**39.798**	**6.488**	**13.002**	**19.679**	**0.000**	**19.679**	**21.782**	**22.171**	**22.783**	**22.652**	**8.146**	**176.501**
(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:

Equipment procurements on the P3a

1. Objective Configuration H/W line supports the NSSMS Mk57 Mod 14 (L class ships) for installation on six LHD 1 class ships. An NSSMS Mk 57 Mod 14 system is comprised of the following:

For LHD 1, 3, 5 - (2) Solid State Transmitter (SSTX), (2) Integrated Radar Processors (IRPs), (2) ESSM ORDALTs and (2) System Launcher Controllers (SLCs) are required for each of those ships.

For LHD 2, 4, 6 - These ships already have the SSTX ORDALT installed, so only (2) Integrated Radar Processors (IRPs), (2) ESSM ORDALTs, and (2) System Launcher Controllers (SLCs) are required for each of those ships.

2. Launcher Min-Mod to BLK 2 H/W line procures equipment required to support the BLK 2 capability on LHA/LHD/CVN Class ships.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	
Models of Systems Affected: MK 57	Modification Type: NSSMS Mk 57	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 5: Radar Group												
A Kits												
Non-Recurring												
1.1.1) SOLID STATE TRANSMITTER UPGRADE (SSTX) - NonOrganic (30)	2 / 4.644	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 4.644
1.1.2) INTEGRATED RADAR PROCESSOR (IRP) - NonOrganic	2 / 2.149	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.149
1.1.3) TEST SUPPORT - Organic	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.030
1.1.4) COTS OBSOLESCENCE - Organic	- / 0.296	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.296
1.1.5) ECP'S - Organic	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.030
Subtotal: Non-Recurring	*- / 7.149*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 7.149*
Subtotal: Radar Group	*4 / 7.149*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*4 / 7.149*
Modification Item 2 of 5: Objective Configuration												
A Kits												
Non-Recurring												
2.1.1) Objective Configuration H/W - NonOrganic (31)	2 / 7.500	- / 5.530	- / -	1 / 11.369	- / -	1 / 11.369	1 / 12.938	- / -	- / -	- / -	- / -	4 / 37.337
2.1.2) Objective Configuration H/W (LHA/LHD/CVN) Backfit - NonOrganic (32)	- / -	- / -	1 / 0.202	1 / 0.203	- / -	1 / 0.203	2 / 0.423	1 / 0.206	- / -	- / -	- / -	5 / 1.034
Subtotal: Non-Recurring	*- / 7.500*	*- / 5.530*	*- / 0.202*	*- / 11.572*	*- / -*	*- / 11.572*	*- / 13.361*	*- / 0.206*	*- / -*	*- / -*	*- / 0.000*	*- / 38.371*
Subtotal: Objective Configuration	*2 / 7.500*	*- / 5.530*	*1 / 0.202*	*2 / 11.572*	*- / -*	*2 / 11.572*	*3 / 13.361*	*1 / 0.206*	*- / -*	*- / -*	*- / -*	*9 / 38.371*
Modification Item 3 of 5: Launcher Min-Mod to Blk 2												
A Kits												
Non-Recurring												
3.1.1) Launcher Min-Mod Blk 2 Capability H/W - NonOrganic (33)	- / -	- / -	2 / 4.000	2 / 4.120	- / -	2 / 4.120	2 / 4.244	2 / 4.371	2 / 4.402	- / -	- / -	10 / 21.137
Subtotal: Non-Recurring	*- / 0.000*	*- / -*	*- / 4.000*	*- / 4.120*	*- / -*	*- / 4.120*	*- / 4.244*	*- / 4.371*	*- / 4.402*	*- / -*	*- / 0.000*	*- / 21.137*
Subtotal: Launcher Min-Mod to Blk 2	*- / -*	*- / -*	*2 / 4.000*	*2 / 4.120*	*- / -*	*2 / 4.120*	*2 / 4.244*	*2 / 4.371*	*2 / 4.402*	*- / -*	*- / -*	*10 / 21.137*
Modification Item 4 of 5: Solid State Transmitter Procurement												
A Kits												
Non-Recurring												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: MK 57	**Modification Type:** NSSMS Mk 57	**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)*
4.1.1) Solid State Transmitter Procurement - NonOrganic [34]	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.410	2 / 9.200	4 / 20.000	- / -	7 / 35.610
Subtotal: Non-Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 6.410*	*- / 9.200*	*- / 20.000*	*- / 0.000*	*- / 35.610*
Subtotal: Solid State Transmitter Procurement	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 6.410*	*2 / 9.200*	*4 / 20.000*	*- / -*	*7 / 35.610*
Modification Item 5 of 5: Launcher Group												
B Kits												
Non-Recurring												
5.1.1) ESSM ORDALT - NonOrganic	10 / 2.542	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.542
5.1.2) SYSTEM LAUNCHER/CONTROLLER (SLC) - NonOrganic	10 / 2.148	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.148
5.1.3) TEST SUPPORT - Organic	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.030
5.1.4) ECP'S - Organic	- / 0.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.260
5.1.5) Launcher Support - Organic [35]	- / 2.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.940
5.1.6) Radar Support - Organic [36]	- / 1.990	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.990
Subtotal: Non-Recurring	*- / 9.910*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 9.910*
Subtotal: Launcher Group	*20 / 9.910*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*20 / 9.910*
Subtotal: Procurement, All Modification Items	*- / 24.559*	*- / 5.530*	*- / 4.202*	*- / 15.692*	*- / -*	*- / 15.692*	*- / 17.605*	*- / 10.987*	*- / 13.602*	*- / 20.000*	*- / 0.000*	*- / 112.177*
Support *(All Modification Items)*												
6.1) Obsolescence [37]	- / -	- / 0.958	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.958
7.1) Radar Support	- / 1.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.900
8.1) Launcher Support	- / 2.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.940
Subtotal: Support	*- / 4.840*	*- / 0.958*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 5.798*
Installation												
Modification Item 1 of 5: Radar Group	- / 5.543	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 5.543
Modification Item 2 of 5: Objective Configuration	- / 0.000	- / 0.000	- / 8.800	- / 1.987	- / 0.000	- / 1.987	- / 2.147	- / 9.062	- / 6.996	- / 0.000	- / 0.000	- / 28.992
Modification Item 3 of 5: Launcher Min-Mod to Blk 2	- / 0.000	- / 0.000	- / 0.000	- / 2.000	- / 0.000	- / 2.000	- / 2.030	- / 2.122	- / 2.185	- / 2.234	- / 0.000	- / 10.571
Modification Item 4 of 5: Solid State Transmitter Procurement	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.418	- / 8.146	- / 8.564
Modification Item 5 of 5: Launcher Group	- / 4.856	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.856
Subtotal: Installation	*- / 10.399*	*- / -*	*- / 8.800*	*- / 3.987*	*- / -*	*- / 3.987*	*- / 4.177*	*- / 11.184*	*- / 9.181*	*- / 2.652*	*- / 8.146*	*- / 58.526*
Total												

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: MK 57	**Modification Type:** NSSMS Mk 57	**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)	**39.798**	**6.488**	**13.002**	**19.679**	**0.000**	**19.679**	**21.782**	**22.171**	**22.783**	**22.652**	**8.146**	**176.501**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 5: Radar Group

Manufacturer Information

Manufacturer Name: Raytheon	Manufacturer Location: Portsmouth, RI
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	Aug 2019						
Delivery Dates	Aug 2022						

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: SOLID STATE TRANSMITTER UPGRADE (SSTX)

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 / 4.644	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.644
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 4.644	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.644

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

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Launcher Min-Mod to BLK 2 H/W

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 / 0.899	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.899

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 5: Radar Group

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Launcher Min-Mod to BLK 2 H/W

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	2 / 0.899	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.899

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

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 2 of 5: Objective Configuration

Installation Information

Method of Implementation: AIT:: Installation Name: Objective Configuration H/W

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 / 8.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 8.800
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.808	- / -	- / -	0 / 0.000	1 / 4.808
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.825	- / -	0 / 0.000	1 / 4.825
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 8.800	- / -	- / -	- / -	- / -	1 / 4.808	1 / 4.825	- / -	0 / 0.000	4 / 18.433

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	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	4

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Objective Configuration H/W

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 / 1.987	0 / 0.000	1 / 1.987	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.987
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.147	- / -	- / -	- / -	0 / 0.000	1 / 2.147
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 4.254	- / -	- / -	0 / 0.000	2 / 4.254
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.171	- / -	0 / 0.000	1 / 2.171
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 2 of 5: Objective Configuration

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Objective Configuration H/W

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 / 1.987	0 / 0.000	1 / 1.987	1 / 2.147	2 / 4.254	1 / 2.171	- / -	0 / 0.000	5 / 10.559

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	-	-	-	-	-	-	-	-	5
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	1	1	-	-	-	-	5

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 3 of 5: Launcher Min-Mod to Blk 2

Installation Information

Method of Implementation: AIT:: Installation Name: Launcher Min-Mod Blk 2 Capability H/W

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 / 2.000	0 / 0.000	2 / 2.000	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.000
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.030	- / -	- / -	- / -	0 / 0.000	2 / 2.030
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.122	- / -	- / -	0 / 0.000	2 / 2.122
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.185	- / -	0 / 0.000	2 / 2.185
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.234	0 / 0.000	2 / 2.234
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	2 / 2.000	0 / 0.000	2 / 2.000	2 / 2.030	2 / 2.122	2 / 2.185	2 / 2.234	0 / 0.000	10 / 10.571

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	-	-	1	-	-	1	1	1	-	-	-	10
Out	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-	-	2	1	-	-	-	-	-	-	-	4	10

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 4 of 5: Solid State Transmitter Procurement

Installation Information

Method of Implementation: [none specified]:: Installation Name: Solid State Transmitter 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	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.418	0 / 0.000	1 / 0.418
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.542	2 / 3.542
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 4.604	4 / 4.604
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.418	6 / 8.146	7 / 8.564

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	-	-	-	6	7
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	7

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 5 of 5: Launcher Group

Manufacturer Information

Manufacturer Name: Raytheon	Manufacturer Location: Portsmouth, 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		Aug 2020					
Delivery Dates		Mar 2022					

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: ESSM ORDALT

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 / 2.621	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 2.621
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	10 / 2.621	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 2.621

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
Out	8	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10

Method of Implementation: Alteration Installation Team:: Installation Name: SYSTEM LAUNCHER/CONTROLLER (SLC)

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 / 2.235	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 2.235

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 5 of 5: Launcher Group

Installation Information

Method of Implementation: Alteration Installation Team:: Installation Name: SYSTEM LAUNCHER/CONTROLLER (SLC)

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	10 / 2.235	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 2.235

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
Out	8	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10

Footnotes:

(30) Starting in FY 18 a new procurement/upgrade strategy will be used. Contracting for Ordalt kits/equipment Components and refurbishment/upgrade of equipment will no longer be accomplished separately. NSWC PHD will award one contact to deliver a fully upgraded System that includes Ordalt kits/equipment components and refurbishment/upgrade. The Radar Group (1.1.1 - 1.1.5) and Launcher Group (2.1.1 - 2.1.4) costs have been rolled into the 5.1.1 Objective Configuration H/W line.

(31) This lines provides funding to for a full up Objective Configuration System that includes Ordalt kits/equipment components procurement and refurbishment/upgrade. Funding for LHD 1 and LHD 4 upgrades planned in FY 18 however NATO received a $15.7M reduction. $5.530M of FY 19 used to complete funding requirement for upgrades on these ships. Funding in FY 22 planned for upgrade on the LHD 3. Funding in FY 23 planned for LHD 5. LHD 1 and LHD 4 planned for installation in FY 20. LHD 3 planned for installation in FY 23 and LHD 5 is planned for installation in FY 24.

(32) This line provides funding for NSSMS MK 57 Mods 14/15 Objective Configuration Upgrades on CVN/LHD class ships. This effort consists mainly of Alteration Installation Team (AIT) efforts to remove the Q70s and install new cables and install updated software. This effort has very small hardware requirements.

(33) The Missile Launcher Upgrade (MLU) program has been placed on indefinite hold. The solicitation for the launcher upgrade development contract was cancelled because a fair and reasonable price with Raytheon could not be reached; however the requirement to deliver a launcher capable of launching an ESSM Blk 2 still exists. The Launcher Min-Mod to Blk 2 will provide interim capability to launch the ESSM Blk 2 until a new approach is in place. This line procures hardware required for the Min-Mod upgrade for ten ships.

(34) Procurement of Solid State Transmitter (SSTX) is required for the conduct of integration testing onboard test-ship and land based test sites and for fielding onboard two ships. Funding provides for procurement of 1 test set and supporting equipment in FY23 for installation at land-based test site, 1 Amphibious ship (requires 2 Solid State Transmitters) in FY24 and 1 Carrier (requires 4 Solid State Transmitters) in FY25.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(35) Starting in FY 18 a new procurement/upgrade strategy will be used. Contracting for Ordalt kits/equipment Components and refurbishment/upgrade of equipment will no longer be accomplished separately. NSWC PHD will award one contact to deliver a fully upgraded System that includes Ordalt kits/equipment components and refurbishment/upgrade. This line has been zeroed out. Funding is now part of the Objective Configuration H/W line.

(36) Starting in FY 18 a new procurement/upgrade strategy will be used. Contracting for Ordalt kits/equipment Components and refurbishment/upgrade of equipment will no longer be accomplished separately. NSWC PHD will award one contact to deliver a fully upgraded System that includes Ordalt kits/equipment components and refurbishment/upgrade. This line has been zeroed out. Funding is now part of the Objective Configuration H/W line.

(37) Funding will be used to address numerous obsolescence issues with the NATO Seasparrow Surface Missile System (NSSMS) that will allow deliver of the Objective Configuration systems to the LHD 3 and LHD 5 in FY 23/24.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 2 / UR006 RAM MK-49 GMLS ORDALTS
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)*	17.305	3.688	4.707	7.203	0.000	7.203	6.840	6.105	6.456	6.835	75.294	134.433
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	17.305	3.688	4.707	7.203	0.000	7.203	6.840	6.105	6.456	6.835	75.294	134.433
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**17.305**	**3.688**	**4.707**	**7.203**	**0.000**	**7.203**	**6.840**	**6.105**	**6.456**	**6.835**	**75.294**	**134.433**
(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 Rolling Airframe Missile is a lightweight, quick-reaction, high firepower missile system designed to provide anti-ship missile defense. The system (MK-31 GMWS) is comprised of a MK-44 Guided Missile Round Pack (GMRP) and the MK 49 Guided Missile Launching System (GMLS), which holds 21 RAM missiles. The 21-round launcher is compatible with various platforms, ranging from large USN amphibious assault ships to Littoral Combat Ship (LCS). This system is designed to counter high density anti-ship, cruise missile raids and provide for ship survivability with accurate terminal guidance, proven lethality and no fire control illumination dependence.

Funding profile directly supports final installations and associated efforts of RAM Mod 3 upgrades on LSD class ships in accordance with ships installation/availability schedule. Installation funding includes DSA planning and actual installation costs. Without this upgrade the Ship Self Defense System (SSDS) on these ships will only be able to fire RAM in manual mode.

Funding also supports the procurement and installation of ORDALTs that address obsolescence and include the Blk 2B Firepower capability. The Firepower capability increases the number of RAM Block 2B missiles fired to meet self-defense probability of raid annihilation (PRA) requirements against evolving threat raid scenarios. Without this ORDALT, RAM will not maintain launcher readiness due to obsolescence in the current configuration, as replacement components are not procurable. In addition, without the firepower capability RAM equipped ships will not be able to defend against emergent raid scenarios. The firepower ORDALT and associated software enables full use of the RAM Block 2B missile against raids.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 2 / UR006 RAM MK-49 GMLS ORDALTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: MK 49 GMLS	**Modification Type:** NON-FMP Install	**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: UR006 RAM MK-49 GMLS ORDALTS												
B Kits												
Recurring												
1.1.1) UR006 RAM MK-49 GMLS ORDALTS - NonOrganic (38)	34 / 12.487	1 / 2.000	10 / 4.707	10 / 4.795	- / -	10 / 4.795	10 / 4.904	10 / 5.040	10 / 5.091	10 / 5.191	43 / 57.198	138 / 101.413
Subtotal: Recurring	*- / 12.487*	*- / 2.000*	*- / 4.707*	*- / 4.795*	*- / -*	*- / 4.795*	*- / 4.904*	*- / 5.040*	*- / 5.091*	*- / 5.191*	*- / 57.198*	*- / 101.413*
Subtotal: UR006 RAM MK-49 GMLS ORDALTS	*34 / 12.487*	*1 / 2.000*	*10 / 4.707*	*10 / 4.795*	*- / -*	*10 / 4.795*	*10 / 4.904*	*10 / 5.040*	*10 / 5.091*	*10 / 5.191*	*43 / 57.198*	*138 / 101.413*
Subtotal: Procurement, All Modification Items	*- / 12.487*	*- / 2.000*	*- / 4.707*	*- / 4.795*	*- / -*	*- / 4.795*	*- / 4.904*	*- / 5.040*	*- / 5.091*	*- / 5.191*	*- / 57.198*	*- / 101.413*
Installation												
Modification Item 1 of 1: UR006 RAM MK-49 GMLS ORDALTS	- / 4.818	- / 1.688	- / 0.000	- / 2.408	- / 0.000	- / 2.408	- / 1.936	- / 1.065	- / 1.365	- / 1.644	- / 18.096	- / 33.020
Subtotal: Installation	*- / 4.818*	*- / 1.688*	*- / -*	*- / 2.408*	*- / -*	*- / 2.408*	*- / 1.936*	*- / 1.065*	*- / 1.365*	*- / 1.644*	*- / 18.096*	*- / 33.020*
Total												
Total Cost (Procurement + Support + Installation)	**17.305**	**3.688**	**4.707**	**7.203**	**0.000**	**7.203**	**6.840**	**6.105**	**6.456**	**6.835**	**75.294**	**134.433**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 2 / UR006 RAM MK-49 GMLS ORDALTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: UR006 RAM MK-49 GMLS ORDALTS

Manufacturer Information

Manufacturer Name: Raytheon Co (39)	Manufacturer Location: Tucson AZA
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	Jun 2019						
Delivery Dates	Dec 2020						

Manufacturer Name: Raytheon Co (40)	Manufacturer Location: Tucson AZA
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 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates		Dec 2021	Dec 2022	Dec 2023	Dec 2024	Dec 2025	Dec 2026

Installation Information

Method of Implementation: NON-FMP Install:: Installation Name: UR006 RAM MK-49 GMLS ORDALTS

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 / 4.818	10 / 1.688	- / -	1 / 1.204	0 / 0.000	1 / 1.204	- / -	- / -	- / -	- / -	2 / 2.534	34 / 10.244
FY 2019	- / -	- / -	- / -	1 / 1.204	0 / 0.000	1 / 1.204	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.204
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.936	- / -	- / -	- / -	0 / 0.000	10 / 1.936
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.065	- / -	- / -	0 / 0.000	10 / 1.065
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.365	- / -	0 / 0.000	10 / 1.365
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.644	0 / 0.000	10 / 1.644
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.096	10 / 2.096
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.710	10 / 1.710
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	43 / 11.756	43 / 11.756
Total	21 / 4.818	10 / 1.688	- / -	2 / 2.408	0 / 0.000	2 / 2.408	10 / 1.936	10 / 1.065	10 / 1.365	10 / 1.644	65 / 18.096	138 / 33.020

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 2 / UR006 RAM MK-49 GMLS ORDALTS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: UR006 RAM MK-49 GMLS ORDALTS

Installation Information

Method of Implementation: NON-FMP Install:: Installation Name: UR006 RAM MK-49 GMLS ORDALTS

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	2	-	-	8	-	-	-	-	-	-	2	-	-	-	10	-	-	-	10	-	-	-	10	-	-	-	10	-	65	138
Out	21	-	-	-	10	-	-	-	-	-	-	-	2	-	-	-	10	-	-	-	10	-	-	-	10	-	-	-	10	65	138

Footnotes:

(38) Budget line includes procurement of multiple ORDALT configurations: FY20 - FY25 procurement is for ORDALT ships that addresses obsolete components in the LICA and LSMU that could no longer be procured as spares resulting in un-repairable RAM launchers when failures occur. In addition, these ORDALTs contain the Blk 2B Firepower capability to defeat raids and meet self-defense PRA requirements against evolving raid threat scenarios. The Firepower ORDALT enables full use of the RAM Blk 2B missile against emergent raid scenarios. Procurement and installations will occur at a rate of 10 per year until the fleet is upgraded. FY19 procurement if for MOD 1 to MOD 3 GMLS ORDALTs for the LSD ship class. Installations, including prior year MOD 1 to MOD 3 GMLS ORDALTs which slipped due to the LSD schedule and re-phasing, are aligned with the Ship Self Defense System (SSDS) upgrade schedule. MOD 1 to MOD 3 GMLS ORDALTs are required once SSDS upgrades are complete, otherwise RAM will be limited to manual firing mode.

(39) MOD 1 to MOD 3 ORDALTS

(40) RAM Blk 2B Firepower ORDALTS

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 3 / UQ005B - SSDS COTS CONVERSION 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)*	162.868	70.613	65.628	72.167	0.000	72.167	73.134	72.358	63.464	71.401	2.550	654.183
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	162.868	70.613	65.628	72.167	0.000	72.167	73.134	72.358	63.464	71.401	2.550	654.183
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**162.868**	**70.613**	**65.628**	**72.167**	**0.000**	**72.167**	**73.134**	**72.358**	**63.464**	**71.401**	**2.550**	**654.183**
(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:

FY20-FY25 includes the procurement of COTS Conversion Kits for CVNs, LPDs, LHDs, LHAs and LSDs, as well as COTS Upgrade Kits / field changes for the shore sites used for SSDS software development/ maintenance, training, and Combat System integration and certification testing. SSDS procurement also includes various Commercial off the Shelf (COTS) based systems and equipment used within the integrated combat system.

The COTS conversion kits will replace obsolete COTS hardware and will support the integration of new CS elements and capabilities.
The budget cost estimates for the procurement and installation of the kits varies depending on the specific ship class (CVNs, LPDs, LSDs, LHAs, and LHDs), and the existing configuration of the ship or shore site.

The SSDS OPN UQ005 supports field changes to the in-service baselines, and the establishment of new baseline configurations at the shore sites. The cost for the kits varies significantly depending on the site, its existing configuration, and mission of the site.

The FY19-FY21 procurement includes TI-16 equipment for the competitive CSEA contract for the development of the SSDS MK 2 ACB-20 baseline.

The FY19-FY21 procurement includes TI-16 equipment for shore facilities. The schedule changes attributed to the Fleet changing ship modernization schedules to address operational requirements.

SSDS FY20 unit costs are:
$ 7,334K for (1) LPD COTS Conversion Kit (TI-16)
$ 9,413K for (1) LHD COTS Conversion Kits (TI-16)
$ 6,752K for (1) LSD COTS Conversion Kit (TI-16)
$ 9,792K for (1) CVN COTS Conversion Kit (TI-16)
$ 8,990K for (1) Wallops Island, (TI-16)
$ 5,607K for Cyber Security
Total Cost for 5 units including Cyber Security in FY20 (UQ005B) is $47.888K

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 3 / UQ005B - SSDS COTS CONVERSION KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Note: FY19 the SSDS TI-16 H/W cost has been consistently increasing. This is primarily due to the initial draft estimates conducted without a completed Technical Data Package (TDP) and Hardware (H/W) Design. In addition, increased cost attributed to implementation of required engineering changes to address hardware component changes and diminishing manufacturing sourcing issues

Price increases reflected in the FY21-FY25 H/W cost.

SSDS FY21 unit costs are:
$ 11,917K for (1) LHD COTS Conversion Kits (TI-16)
$ 3,736K for (1) Shore Facility (TI-16)
$ 3,737K for (1) Shore Facility (TI-16)
$ 3,010K for Cyber Security
$ 4,471K for CAC2S
Total Cost for 3 units including Cyber Security & CAC2S in FY21 (UQ005B) is $26,871K

SSDS Ship Installation Costs in FY20 (total $16,415K) include:
$ 6,459K for AIT/DSA for installation of (1) LHD Kit (TI-16) LHD4
$ 6,206K for AIT/DSA for installation of (1) LHD Kit (TI-16) LPD17
$ 3.750K Advanced Planning/DSA for 5 ships (1 LPD, 2 LHDs, 1 LSD, 1 CVN)

SSDS Shore Installation Costs in FY20 (total $1,325K) include:
1 Shore Installation

Note: FY20 Ship Installation cost is increasing, FY20 execution will vary. Increases reflected in budget exhibit in FY21 and out.

Ship Installation Cost, which includes advanced planning, will vary per year depending on the quantities of ships and the mix of ship classes (i.e., CVN, LHD, LHA, LPD, or LSD). Installation cost is significantly higher than advanced planning. This can cause large variations between years. Variation in Ship Schedules can also drive changes per year. Recently, the installation cost has been increasing due to a) installations in non-traditional locations (e.g., Bremerton) driven by the Coast-wide bid process which causes extensive travel costs, b) Delays in delivery of Ship Installation Drawings, and c) scope changes during the modernization window. Further apparent cost "increases" are due to aligning modernization-related work such as Combat System documentation updates within the modernization budget.

SSDS Ship Installation Costs in FY21 (total $43,246K) include:
$ 37,960 for AIT/DSA for installation of (4) Kits (TI-16) (1 LHD, 2 LPDs, 1 CVN)
$ 5,286K for Advanced Planning/DSA for 5 future Hulls (2 LHDs, 1 LHA, 2 LSDs)

SSDS Shore Installation Costs in FY21 (total $2,050K) include:
1 Shore Installation and Advanced Planning for 2 future shore sites

[UQ5IN FMP SHIP UNITS] The cost for each kit is listed above. SSDS kit funding is provided to various contractors and field activities. The SSDS equipment procurement is based on competitive contracts. Production lead time for kits ranges from 12 months (for equipment COTS upgrade kits/field changes) up to 24 months for system COTS conversion kits for ships and shore sites.

[UQ6IN NON FMP SHORE SITES] The non-FMP kits are required for SSDS/CS shore sites: The SSDS MK 2 System/Software Platform System Engineering Agent; Combat System Engineering Agent; SCSC Wallops Island; CS Integration/Engineering test facility; NSWC Dahlgren CS software certification facility; and crew SSDS maintenance training facilities. Each of these facilities require equipment to support the

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 3 / UQ005B - SSDS COTS CONVERSION KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

in-service ship configurations, and to support the new configuration baselines in development. The SSDS OPN UQ005 supports field changes to the in-service baselines, and the establishment of new baseline configurations at the shore sites. The cost for the kits varies significantly depending on the site, its existing configuration, and mission of the site.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 3 / UQ005B - SSDS COTS CONVERSION KITS
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: UQ005B - SSDS COTS CONVERSION KITS												
B Kits												
Recurring												
1.1.1) UQ5IN FMP SHIP UNITS - NonOrganic	9 / 45.255	3 / 31.583	4 / 33.291	1 / 11.917	- / -	1 / 11.917	3 / 33.540	2 / 22.506	3 / 33.984	1 / 10.266	- / -	26 / 222.342
1.1.2) UQ6IN NON FMP SHORE SITES - NonOrganic (41)	14 / 65.392	1 / 9.249	1 / 14.597	2 / 14.954	- / -	2 / 14.954	1 / 9.620	2 / 20.850	1 / 10.574	3 / 26.914	- / -	25 / 172.150
Subtotal: Recurring	*- / 110.647*	*- / 40.832*	*- / 47.888*	*- / 26.871*	*- / -*	*- / 26.871*	*- / 43.160*	*- / 43.356*	*- / 44.558*	*- / 37.180*	*- / 0.000*	*- / 394.492*
Subtotal: UQ005B - SSDS COTS CONVERSION KITS	*23 / 110.647*	*4 / 40.832*	*5 / 47.888*	*3 / 26.871*	*- / -*	*3 / 26.871*	*4 / 43.160*	*4 / 43.356*	*4 / 44.558*	*4 / 37.180*	*- / -*	*51 / 394.492*
Subtotal: Procurement, All Modification Items	*- / 110.647*	*- / 40.832*	*- / 47.888*	*- / 26.871*	*- / -*	*- / 26.871*	*- / 43.160*	*- / 43.356*	*- / 44.558*	*- / 37.180*	*- / 0.000*	*- / 394.492*
Installation												
Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS	- / 52.221	- / 29.781	- / 17.740	- / 45.296	- / 0.000	- / 45.296	- / 29.974	- / 29.002	- / 18.906	- / 34.221	- / 2.550	- / 259.691
Subtotal: Installation	*- / 52.221*	*- / 29.781*	*- / 17.740*	*- / 45.296*	*- / -*	*- / 45.296*	*- / 29.974*	*- / 29.002*	*- / 18.906*	*- / 34.221*	*- / 2.550*	*- / 259.691*
Total												
Total Cost (Procurement + Support + Installation)	**162.868**	**70.613**	**65.628**	**72.167**	**0.000**	**72.167**	**73.134**	**72.358**	**63.464**	**71.401**	**2.550**	**654.183**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 3 / UQ005B - SSDS COTS CONVERSION KITS

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

Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS

Manufacturer Information

Manufacturer Name: TBD (Competitive Procurement)

Manufacturer Location: TBD (Competitive Procurement)

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	Jan 2021	Jan 2022	Jan 2023	Jan 2024	
Delivery Dates	Jan 2020	Feb 2021	Jan 2022	Jun 2023	Jan 2024	Jan 2025	

Installation Information

Method of Implementation: [none specified]:: Installation Name: UQ5IN FMP SHIP UNITS - INSTALLATION

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 / 42.390	2 / 21.641	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 64.031
FY 2019	0 / 1.532	0 / 4.060	2 / 12.665	1 / 12.870	0 / 0.000	1 / 12.870	0 / 0.450	- / -	- / -	- / -	0 / 0.000	3 / 31.577
FY 2020	- / -	0 / 1.680	0 / 1.990	3 / 25.090	0 / 0.000	3 / 25.090	1 / 6.580	0 / 0.460	- / -	- / -	0 / 0.000	4 / 35.800
FY 2021	- / -	- / -	0 / 1.760	0 / 1.753	0 / 0.000	0 / 1.753	1 / 7.832	0 / 0.458	- / -	- / -	0 / 0.000	1 / 11.803
FY 2022	- / -	- / -	- / -	0 / 3.256	0 / 0.000	0 / 3.256	0 / 5.253	3 / 21.313	0 / 1.284	- / -	0 / 0.000	3 / 31.106
FY 2023	- / -	- / -	- / -	0 / 0.277	0 / 0.000	0 / 0.277	0 / 7.485	0 / 2.238	2 / 12.747	0 / 0.749	0 / 0.000	2 / 23.496
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.274	0 / 2.202	0 / 1.373	3 / 30.232	0 / 0.000	3 / 34.081
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.131	0 / 1.022	0 / 0.490	1 / 0.000	1 / 1.643
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	7 / 43.922	2 / 27.381	2 / 16.415	4 / 43.246	0 / 0.000	4 / 43.246	2 / 27.874	3 / 26.802	2 / 16.426	3 / 31.471	1 / 0.000	26 / 233.537

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	2	1	-	-	1	-	-	-	3	-	2	-	-	-	-	-	3	1	26
Out	7	-	-	-	2	-	-	1	1	-	-	2	2	1	-	-	-	-	-	-	1	-	-	2	1	2	-	-	-	4	26

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 3 / UQ005B - SSDS COTS CONVERSION KITS

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

Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS

Installation Information

Method of Implementation: Method:: Installation Name: UQ6IN NON FMP SHORE SITES - INSTALLATION

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 / 8.299	3 / 1.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 10.199
FY 2019	- / -	0 / 0.500	1 / 1.325	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.825
FY 2020	- / -	- / -	- / -	1 / 0.550	0 / 0.000	1 / 0.550	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.550
FY 2021	- / -	- / -	- / -	0 / 1.500	0 / 0.000	0 / 1.500	2 / 1.350	- / -	- / -	- / -	0 / 0.000	2 / 2.850
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.750	1 / 0.650	- / -	- / -	0 / 0.000	1 / 1.400
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.550	2 / 1.700	- / -	0 / 0.000	2 / 3.250
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.780	1 / 0.650	0 / 0.000	1 / 1.430
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.100	3 / 2.550	3 / 4.650
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	11 / 8.299	3 / 2.400	1 / 1.325	1 / 2.050	0 / 0.000	1 / 2.050	2 / 2.100	1 / 2.200	2 / 2.480	1 / 2.750	3 / 2.550	25 / 26.154

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	2	-	-	-	1	-	-	-	1	-	-	-	2	-	-	-	1	-	-	-	2	-	-	-	1	3	25
Out	11	-	-	1	2	-	-	-	1	-	-	-	1	-	-	-	2	-	-	-	1	-	-	-	2	-	-	-	1	3	25

Footnotes:

(41) Cyber Security and CAC2s Funds have been added to the budget under UQ6IN Non FMP Shore Sites. The Cyber Security and CAC2s funds are to procure components in support of implementing, testing, and certifying a Cyber Security capability at SSDS Shore Sites and CAC2s afloat sites. The rest of the UQ6IN funds are to procure TI-16 Equipment for CSEA, Wallops Island (Testing), Dam Neck (Trainer), and Integrated Combat Systems Test Facility.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 4 / VV001 NULKA 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)*	37.999	8.455	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	46.455
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	37.999	8.455	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	46.455
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**37.999**	**8.455**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.001**	**46.455**
(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:

Funds the procurement and installation of the MK53 Nulka Decoy Launching System (DLS). The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the EW operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. The first DLS for CVNs was procured under the previous OPN budget (BLI 5530). Six of the final seven are being procured under this budget. Funding is being realigned to BLI 5530 starting in FY20. The last DLS will be procured under BLI 5530.

DLS Installation costs increase for CVN 71 in FY18 was due to significantly higher than estimated labor, material, and shipyard support services costs, as well as increased overtime needed to meet 188-day availability.

A MK53 Decoy Launching System procurement was previously planned for CVN 74 in FY19. CVN 74 is now planned for an Refueling and Complex Overhaul (RCOH) SCN period of availability. Funding planned for the CVN 74 procurement and installation has been re-aligned to cover carrier installation funding shortfalls. Carrier installation costs are higher than originally estimated due to location of installations, and labor and material cost increases.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 4 / VV001 NULKA SYSTEMS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: MK 53 DLS	**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: VV001 NULKA SYSTEMS												
B Kits												
Recurring												
1.1.1) NULKA SYSTEMS - NonOrganic	6 / 4.102	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 4.102
1.1.2) TRAINING EQUIPMENT - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.001	- / 0.001
Subtotal: Recurring	*- / 4.102*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.001*	*- / 4.103*
Subtotal: VV001 NULKA SYSTEMS	*6 / 4.102*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.001*	*6 / 4.103*
Subtotal: Procurement, All Modification Items	*- / 4.102*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.001*	*- / 4.103*
Installation												
Modification Item 1 of 1: VV001 NULKA SYSTEMS	- / 33.897	- / 8.455	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 42.352
Subtotal: Installation	*- / 33.897*	*- / 8.455*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 42.352*
Total												
Total Cost (Procurement + Support + Installation)	**37.999**	**8.455**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.001**	**46.455**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Modification Number / Title:** 4 / VV001 NULKA SYSTEMS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: VV001 NULKA SYSTEMS

Manufacturer Information

Manufacturer Name: SECHAN	Manufacturer Location: LITITZ, PA
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 14

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: NULKA 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	5 / 33.897	1 / 8.455	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 42.352
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 33.897	1 / 8.455	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 42.352

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	3	-	-	1	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5253 / Tomahawk Support 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: 289

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)*	753.299	86.045	59.436	84.087	0.000	84.087	84.283	85.020	86.133	87.391	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	753.299	86.045	59.436	84.087	0.000	84.087	84.283	85.020	86.133	87.391	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**753.299**	**86.045**	**59.436**	**84.087**	**0.000**	**84.087**	**84.283**	**85.020**	**86.133**	**87.391**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.189	0.069	0.178	-	0.178	0.199	0.220	0.224	0.228	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Theater Mission Planning Center (TMPC) and Tactical Tomahawk Weapons Control System (TTWCS) are components of the Tomahawk Weapons System (TWS) required to plan and execute Tomahawk strikes.

The Theater Mission Planning Center (TMPC) consists of Commercial and Government Off-The-Shelf (COTS/GOTS) software and COTS hardware. TMPC is the mission planning segment of the Tomahawk Weapon System (TWS) that provides subsystems for the precision targeting, route planning, mission distribution, and strike management of Tomahawk cruise missile missions from sites located ashore and afloat. TMPC optimizes all aspects of the Tomahawk missile mission to successfully engage a target. TMPC has evolved into 4 scalable configurations deployed at 189 sites: Cruise Missile Support Activities (CMSAs) (3), Tomahawk Strike Mission Planning Cells (TSMPCs) (3), Carrier Strike Groups (CSGs) (19 - 10 CVN), and Firing Units (FRUs) (145 - 88 Surface / 57 Subsurface). Additionally, TMPC is installed in labs (6) and training classrooms (13) that contain various combinations of the four configurations.

Continuous TMPC software updates decreases mission planning time and increases the quality and accuracy of each mission while reducing complexity. TMPC provides mission planning at the theater and operational levels and is designed for high rate mission planning production responsive to national strategic, operational, and tactical requirements. TMPC produces and distributes missions; provides command information services; provides strike planning, execution, coordination, control and reporting, and provides Maritime Component Commanders (MCC) the capability to plan or modify conventional TWS missions. TMPC supports major joint combat operations and Overseas Contingency Operations. TMPC was previously referred to as Tomahawk Command and Control System (TC2S).

Funds provide for systems engineering, testing, Independent Verification & Validation (IV&V), security accreditation, installation, site acceptance testing, user familiarization of products, and hardware. Also, this funding line provides for COTS refreshment, engineering changes, software upgrades, cyber-security modernization, and associated Nuclear Powered General Purpose Attack Submarine/Guided Missile Destroyer/Guided Missile Cruiser/Nuclear Aircraft Carrier (SSNs/DDGs/CGs/CVN) logistics and infrastructure to maintain compatibility and interoperability with existing and future TMPC and TTWCS system configurations.

Surface and Submarine Tactical Tomahawk Weapon Control System (TTWCS) is a post milestone III (Milestone C) program executing a technology refresh to support Tomahawk's Block V introduction in FY2021. This refresh resolves processor, display console, equipment rack and software obsolescence issues and ensures required functionality to support modernized capabilities of the weapon system. The updated TTWCS version was released in FY 2017, but hardware and software must be procured and delivered throughout the next several years to promulgate it across the entire fleet, FRUs (145 - 88 Surface / 57 Subsurface), labs (6), and initial training classrooms (2). Advanced TTWCS functions include: tasking validation (missile mission matching), planning of over the water routes, initialization, preparation and launch of BLK III/IV/V missiles, TTWCS reduced response time and increased operational flexibility through addition of Launch Platform Mission Planning (LPMP), C4I Web services interfaces, and in-

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5253 / Tomahawk Support 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: 289		

flight monitoring and control of Blk IV missiles. In addition, funds provided to continue TTWCS viability in TTWCS v5.6 and ensure compliance with cyber security mandates, continue to address hardware obsolescence through periodic COTS hardware refresh and periodically refresh of GOTS software to address obsolescence, support migration from 32 bit to 64 bit architecture and migrate away from obsolete or unsupportable software. Finally, this tech refresh will allow reduction of system complexity and incorporation of critical software fixes. Program options are being identified that will increase TWS capabilities integrated into future platforms (DDG-1000, LUSV). Development of TTWCS configuration management changes to comply with the provisions of section 1634 of the 2018 National Defense Authorization Act was completed in FY 2019; kit deployment continues into FY 2020 and beyond. These efforts to bring TTWCS into compliance with the provisions of section 1634 of the 2018 National Defense Authorization Act introduced unplanned cost and developmental schedule delays to the integration of new capabilities into the Tomahawk Weapons 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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment	**P-1 Line Item Number / Title:** 5253 / Tomahawk Support 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: 289

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 / 525300, TOMAHAWK Support Equipment				- / 753.299	- / 86.045	- / 59.436	- / 84.087	- / 0.000	- / 84.087
P-40	**Total Gross/Weapon System Cost**				**- / 753.299**	**- / 86.045**	**- / 59.436**	**- / 84.087**	**- / 0.000**	**- / 84.087**

*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:
This line funds TTWCS and TMPC system modernization upgrades.

TTWCS: FY 2021 funding is required to continue fielding TTWCS hardware/software obsolescence updates. Funds also provide for integration, modernization and interoperability efforts necessary to keep pace with changes, retain capability and exploit capabilities of internal products (TWS All-Up-Round missile and TTWCS) and external products (Modernized Integrated Data Base (MIDB), National Geospatial Intelligence Agency (NGA) products, Distributed Common Ground Systems (DCGS) Integrated Backbone (DIB) compliance, Future Imagery Architecture (FIA) imagery formats and Intelligence Surveillance & Reconnaissance (ISR) interfaces, Network Centric Enterprise Services (NCES), Global Information Grid/Internet Protocol (GIG/IP) (V)6, FORCEnet compliance systems/interfaces). These efforts ensure the continued effectiveness of the TWS, including interoperability with TMPC deployed configurations. Funding supporting TTWCS is appropriately phased to complete the tech refresh in conjunction with the fielding of the Block V Tomahawk in FY 2021, relies on COTS hardware that requires a stable and established upgrade path to meet cyber security mandates, ensures continued vendor supportability, avoids costly retrofits of fielded systems, and ensures interoperability between tightly coupled COTS software applications, operating systems, and hardware processing nodes. Consequently, increased product improvement resources are required to comply with commercial hardware/software supportability mandates, obsolescence, and information assurance requirements to maintain pace with modern computing architectures. Funding that was reflected in FY 2020 under cost code 2.1.2, SubUUV Transition, in FY 2021 through FY2023 was realigned to a more appropriate budget line for execution.

TMPC: FY 2021 funding is required to continue the upgrade of unsupportable and obsolete TMPC hardware and software, ensure compliance with DoD cyber-security mandates, continues fielding of TMPC 5.0.2 onboard Firing Units (DDGs/CGs), commence fielding of TMPC 6.0 to 189 sites, and restore TMPC 7.0 (Maritime Strike Tomahawk) software and integration modernization efforts to previous levels in order to deploy Maritime Strike Tomahawk. Funding increase in FY 2021 supports TMPC 7.0 cyber protection (including virtualization) and modernization efforts essential to addressing approximately 400 requirements for cyber resilience of the TMPC system (classified as having a high Mission Assurance Category for cyber Confidentiality, Integrity, and Availability). Funding increase also provides for the completion of a unique hardware buy required to support program protection for the Tomahawk Planning System (TPS) component of the TMPC in order to protect Critical Program Information. Integration of this critical program protection technology will occur in FY 2021 - FY 2024, and will permit implementation of advanced capabilities of the Tomahawk Modernization program with needed program protection safeguards.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5253 / Tomahawk Support Equipment	**Item Number / Title [DODIC]:** 1 / 525300, TOMAHAWK Support 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
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	753.299	86.045	59.436	84.087	0.000	84.087
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	753.299	86.045	59.436	84.087	0.000	84.087
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**753.299**	**86.045**	**59.436**	**84.087**	**0.000**	**84.087**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	0.189	0.069	0.178	-	0.178
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 - TTWCS Cost																		
Recurring Cost																		
1.1.1) Tactical Tomahawk Weapon Control System (TTWCS) Hardware [1]	-	-	17.479	-	-	5.198	-	-	4.700	-	-	4.606	-	-	-	-	-	4.606
Subtotal: Recurring Cost	-	-	*17.479*	-	-	*5.198*	-	-	*4.700*	-	-	*4.606*	-	-	-	-	-	*4.606*
Subtotal: Hardware - TTWCS Cost	**-**	**-**	***17.479***	**-**	**-**	***5.198***	**-**	**-**	***4.700***	**-**	**-**	***4.606***	**-**	**-**	**-**	**-**	**-**	***4.606***
Hardware - HARDWARE RECURRING SUPPORT - TTWCS Cost																		
Recurring Cost																		
2.1.1) TTWCS Product Improvement [2]	-	-	167.241	-	-	19.891	-	-	16.892	-	-	17.148	-	-	-	-	-	17.148
Subtotal: Recurring Cost	-	-	*167.241*	-	-	*19.891*	-	-	*16.892*	-	-	*17.148*	-	-	-	-	-	*17.148*
Subtotal: Hardware - HARDWARE RECURRING SUPPORT - TTWCS Cost	**-**	**-**	***167.241***	**-**	**-**	***19.891***	**-**	**-**	***16.892***	**-**	**-**	***17.148***	**-**	**-**	**-**	**-**	**-**	***17.148***
Hardware - TMPC Cost																		
Recurring Cost																		
3.1.1) Tomahawk Mission Planning Center (TMPC) Hardware [3]	-	-	27.863	-	-	1.989	-	-	1.674	-	-	6.654	-	-	-	-	-	6.654
Subtotal: Recurring Cost	-	-	*27.863*	-	-	*1.989*	-	-	*1.674*	-	-	*6.654*	-	-	-	-	-	*6.654*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5253 / Tomahawk Support Equipment	Item Number / Title [DODIC]: 1 / 525300, TOMAHAWK Support Equipment
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)
Subtotal: Hardware - TMPC Cost	-	-	27.863	-	-	1.989	-	-	1.674	-	-	6.654	-	-	-	-	-	6.654
Software - PRODUCT IMPROVEMENTS - TMPC Cost																		
Recurring Cost																		
4.1.1) TMPC Product Improvements (4)	-	-	178.372	-	-	19.930	-	-	10.608	-	-	21.643	-	-	-	-	-	21.643
Subtotal: Recurring Cost	-	-	178.372	-	-	19.930	-	-	10.608	-	-	21.643	-	-	-	-	-	21.643
Subtotal: Software - PRODUCT IMPROVEMENTS - TMPC Cost	-	-	178.372	-	-	19.930	-	-	10.608	-	-	21.643	-	-	-	-	-	21.643
Support - Support - TTWCS Cost																		
5.1) TTWCS Production Engineering (5)	-	-	25.238	-	-	0.976	-	-	0.901	-	-	1.001	-	-	-	-	-	1.001
5.2) TTWCS Integrated Logistic Support (6)	-	-	122.093	-	-	13.003	-	-	9.300	-	-	9.413	-	-	-	-	-	9.413
Subtotal: Support - Support - TTWCS Cost	-	-	147.331	-	-	13.979	-	-	10.201	-	-	10.414	-	-	-	-	-	10.414
Support - TMPC Cost																		
6.1) TMPC Production Engineering (7)	-	-	45.101	-	-	4.440	-	-	2.481	-	-	4.530	-	-	-	-	-	4.530
6.2) TMPC Production Support (8)	-	-	42.042	-	-	4.218	-	-	2.324	-	-	4.255	-	-	-	-	-	4.255
6.3) TMPC Integrated Logistic Support (9)	-	-	103.842	-	-	16.400	-	-	10.556	-	-	14.837	-	-	-	-	-	14.837
Subtotal: Support - TMPC Cost	-	-	190.985	-	-	25.058	-	-	15.361	-	-	23.622	-	-	-	-	-	23.622
Support - ILS INSTALLATIONS Cost																		
7.1) FMP Installations	-	-	15.139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - ILS INSTALLATIONS Cost	-	-	15.139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Miscellaneous Cost																		
8.1) TTWCS Other Cost	-	-	8.889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Miscellaneous Cost	-	-	8.889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	753.299	-	-	86.045	-	-	59.436	-	-	84.087	-	-	0.000	-	-	84.087

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5253 / Tomahawk Support Equipment	Item Number / Title [DODIC]: 1 / 525300, TOMAHAWK Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Footnotes:

(1) TTWCS Hardware funds are required to address hardware obsolescence through periodic COTS hardware refresh. Funds were realigned in FY 2020 and FY 2021 from cost code 2.1.1 (TTWCS Product Improvement) to cost code 1.1.1 (TTWCS Hardware) to support planned procurement of TTWCS suites for retrofit onto fleet surface platforms.

(2) TTWCS relies on COTS hardware that require constant and predictive upgrade path to meet cyber security mandates, ensure continued vendor supportability, avoid costly retrofits of fielded systems, and ensure interoperability between tightly coupled COTS software applications, operating systems, and hardware processing nodes. Consequently, increased product improvement resources are required commencing in FY 2017 to comply with evolving security compliance requirements that necessitate a more frequent update cycle to combat obsolescence and adhere to commercial hardware/software supportability mandates to maintain pace with modern computing architectures. Funds were realigned in FY 2020 and FY 2021 from cost code 2.1.1 (TTWCS Product Improvement) to cost code 1.1.1 (TTWCS Hardware) to support planned procurement of TTWCS suites for retrofit onto fleet surface platforms.

(3) Procures hardware and software for installations of system upgrades at U.S. TMPC sites. FY 2021 increase in funds from FY 2020 completes a unique hardware buy in FY 2021 to protect TMPC Critical Program Information (CPI). Integration of this program protection will occur in FY 2021 - FY 2024, and is essential to enable implementation of advanced capabilities while also safeguarding CPI. This also includes hardware and software for the system developers supporting TMPC 7.0 modernization upgrades. FY 2021 procures the hardware and software for TMPC 6.0 installations at Cruise Missile Support Activities (CMSALANT & CMSAPAC), Tomahawk Strike Mission Planning Cells (TSMPCs) (3 - C5F, C6F, C7F), Firing Units Guided Missile Destroyers, Guided Missile Cruisers and Nuclear Powered General Purpose Attack Submarines (DDGs/CGs/SSNs), CVNs, Command Staffs, laboratories, and training sites. TMPC 6.0 is mission critical to support upgraded navigation, communications capabilities, and systems essential to the continued effectiveness and interoperability of the TWS.

(4) Provides for software engineering efforts associated with the delivery of system modernization and improvements by the prime developers to continue the upgrade of unsupportable and obsolete TMPC hardware and software and to ensure compliance with DoD cyber security mandates. In FY 2021, this line supports TMPC 7.0 (Maritime Strike Tomahawk) software and integration modernization efforts, which allow continued development to meet Maritime Strike Tomahawk deployment needs. Funding increase in FY 2021 supports TMPC 7.0 cyber protection (including virtualization) and modernization efforts essential to addressing approximately 400 requirements for cyber resilience of the TMPC system (classified as having a high Mission Assurance Category for cyber Confidentiality, Integrity, and Availability). FY2021 funding also provides for continuing the upgrades to the TMPC Enterprise Network (TEN 2.0) to meet requirements for the distribution of electronic software distribution / propagation, enable remote assistance/troubleshooting, provide enhanced configuration management visibility, and provide cost effective means to deploy cyber-security patches and settings expeditiously. FY 2021 also funds software system upgrades for the submarine community to address system interfaces and upgrades to support the TMPC system usability improvements required for fleet operators to execute large and complex TLAM operations as required by US Fleet Forces Command (USFFC).

(5) TTWCS Production Engineering Support required for Surface/Submarine installations onboard firing units. Variations in ship availability schedules are the principle cause of funding changes from year to year.

(6) TTWCS Integrated Logistics Support required for Surface/Submarine installations onboard firing units. Variations in ship availability schedules are the principle cause of funding changes from year to year.

(7) Provides systems engineering support for system design and definition of requirements necessary to evaluate all functional aspects of the TMPC subsystems and workflows that directly impact strike & execution and mission planning products. It includes reviewing TWS and external interfaces for impacts resulting from design upgrades/changes within TWS and by external organizations, Independent Verification & Validation (IV&V), and security accreditation activities. FY2021 funding increase from FY2020 supports TMPC 7.0 software modernization efforts.

(8) Funds activities that directly support system upgrades requirements such as user events, requirements validation, systems engineering technical reviews, software formal qualification testing, and delta training documentation. FY2021 funding increase from FY2020 supports TMPC 7.0 software modernization efforts.

(9) FY2021 increase in funds from FY2020 supports initial TMPC 6.0 installations at the Cruise Missile Support Activities & Tomahawk Strike Mission Planning Cells (TSMPCs) (3 - C5F, C6F, and C7F), Firing Units Guided Missile Destroyer, Guided Missile Cruiser, and Nuclear Attack Submarine DDGs/CGs/SSNs), CVNs, Command Staffs, laboratories, and training classrooms. TMPC 6.0 is mission critical to support upgraded navigation, communications capabilities, and systems essential to the continued effectiveness and interoperability of the TWS. FY2021 funding also provide for the continuation of TMPC 5.0.2 installations onboard Firing Units (DDGs & CGs) and TMPC 7.0 installations for the developer sites supporting modernization upgrades. FY2021 funding also supports integration and installation of mission critical program protection technology necessary to protect critical program information. This program protection capability is essential to enable implementation of advanced capabilities of Tomahawk Modernization program with required program protection safeguards.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N

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)*	1,069.073	253.579	258.933	258.910	0.000	258.910	272.865	271.139	263.819	269.083	-	2,917.401
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,069.073	253.579	258.933	258.910	0.000	258.910	272.865	271.139	263.819	269.083	-	2,917.401
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,069.073**	**253.579**	**258.933**	**258.910**	**0.000**	**258.910**	**272.865**	**271.139**	**263.819**	**269.083**	**-**	**2,917.401**
(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 budget provides for the procurement of Strategic Weapons System (SWS) equipment for deployed ballistic missile submarines (SSBNs) and shore support sites to support the TRIDENT II (D5) program. Included are shipboard subsystem equipment modernization and technical refresh efforts associated with the TRIDENT II (D5) life extension program. TRIDENT II SSBN hull life has been extended, therefore extending system life to FY 2042.

OTHER MATERIAL SUPPORT
A broad range of other material support equipment must be procured for deployed SSBNs, shore installations and contractor facilities. Included within this category are general and special purpose test equipment, launcher expendables, navigation principal items, test instrumentation in support of missile flight tests, and missile checkout equipment.

ALTERATIONS
Alterations to non-flying tactical hardware are continuing requirements for the SWS. Requirements primarily relate to shipboard investments in Commercial-off-the-Shelf/Non-Developmental Items (COTS/NDI) SWS subsystem equipment, including periodic refresh cycles, to ensure continued reliable performance of the weapon system for its extended service life to match the OHIO Class life extension. Strategic Programs Alterations (SPALTs) also entail
the application of available technology to eliminate personnel safety hazards, correct design deficiencies, maintain system effectiveness by resolving equipment operability problems, achieve logistic economies, and provide for shipboard subsystem D5 life extension modernization efforts.

Funds are required to procure alterations to the SWS launcher and fire control subsystems; to inertial, non-inertial, and Electrostatic Gyro Navigator (ESGN) navigation subsystem equipment on deployed SSBNs and installed at supporting shore facilities, including the TRIDENT Training Facility (TTF), Bangor; TTF, Kings Bay; the Ashore Navigation Center; and the Inertial System Test Laboratory; to test instrumentation used on SSBNs, support ships, and at the Eastern Test Range, the TRIDENT Refit Facility (TRF), Bangor, and TRF, Kings Bay; and to missile handling equipment, missile test and readiness equipment, and surface support equipment. Installation of approved SPALTs is performed on a turnkey basis in conjunction with the procurement of equipment. Use of COTS/NDI has been initiated and is being implemented in all subsystems, wherever possible.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		

The majority of the Alterations funding supports the Shipboard System Integration (SSI) program which utilizes a COTS based strategy that integrates common electronics (from Fire Control, Launcher, and Navigation) into the fire control sub-system as well as refreshing inertial systems in order to ensure the TRIDENT II (D5) weapon system can be sustained to FY 2042 in support of OHIO Class SSBNs. Below is a description of each current SSI Increment (Inc):

SSI Inc 8: Inc 8 provides replacement of the 30 year old ESGN which needs a refresh of inertial technology components, provides replacement of the Electronic Equipment Consoles (EEC), and updates Navigation Subsystem software to accommodate ESGN replacement navigator. Also, provides SWS subsystem SPALTs for FC and TTF NAV Lab trainers, and SDS/DRS Software SPALT changes which are driven by data requirement changes. The SHIPALTs retain NAV Center bedplate, cabling, chilled water/ventilation, and retain electrical power.

SSI Inc 11: Inc 11 develops the Launcher Initiation System (LIS) for backfit onto OHIO Class D5LE. This provides a technical refresh of 30+ year old technology to ensure long term system reliability. Ship/SWSS SHIPALT is to replace electrical cable with hybrid fiber-optic/electrical cable.

SSI Inc 13: Inc 13 provides Shipboard Systems Refresh for FCS, NAV, and Missile Test and Readiness Equipment (MTRE) to integrate with the subsystems.

SSI Inc 15: Prerequisite is SSI Inc 13. Inc 15 provides pre-configuration and post-configuration support of Inc 8 and Inc 11. Inc 15 provides refresh alterations for fire control equipment, navigation, launcher, and trainer subsystems.

SSI Inc 16: Prerequisite is SSI Inc 15. Inc 16 provides Fire Control Subsystem refresh of SSI Inc 13 components, technical refresh of Shipboard Data System (SDS) subsystems, technical refresh of Navigation SSI Inc 4, technical refresh of Launcher Variable Energy Eject (VEE) actuators to address obsolescence to sustain the fleet. Inc 16 efforts also focus on capturing legacy fire control and navigation subsystem behavior to develop a functional model to inform future SSI increments.

TRAINING
This category provides for procurement of, and alterations to, both tactical and non-tactical equipment required at submarine training facilities to train personnel in the operation and maintenance of launcher and handling, fire control, navigation, missile checkout, and test instrumentation subsystems. Each training facility consists of an integrated family of system and unit laboratories that interface with a training simulation system to provide complete and realistic training for replacement and off-crew personnel, both officer and enlisted, as required for manning of SSBNs and shore facilities. Funding is budgeted to procure training-unique equipment required as the result of alterations to SWS tactical equipment, including those associated with D5 life extension.

COLUMBIA CLASS
Funding in this category is in support of the Columbia class SSBN for the procurement of trainer 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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
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	Strategic Missile Systems Equip	P-5a, P-21			- / 1,069.073	- / 253.579	- / 258.933	- / 258.910	- / -	- / 258.910
P-40	**Total Gross/Weapon System Cost**				**- / 1,069.073**	**- / 253.579**	**- / 258.933**	**- / 258.910**	**- / 0.000**	**- / 258.910**

*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:

OTHER MATERIAL SUPPORT

A broad range of other material support equipment must be procured for deployed SSBNs, shore installations and contractor facilities. Included within this category are general and special purpose test equipment, launcher expendables, navigation principal items, test instrumentation in support of missile flight tests, and missile checkout equipment. Amounts included within this P1 line for this category are subdivided as follows:

Launcher and Handling Equipment: Cost code 1.2 funding in FY21 continues to procure 10 MK-74 Gas Generator (GG) units to support missile launch operations and the life extension of the GGs. Cost code 1.3 funding for the procurement and qualification of Gas Generator Case Hardware required to replace cases for expended/fired GGs. Funding in this category fluctuates year to year due to test schedules. Cost code 1.6 funding decreases as final ballast install support equipment is procured.

Fire Control Equipment: Cost code 2.1 funding in FY 2021 provides for procurement of continued capital maintenance projects at the Naval Industrial Reserve Ordnance Plant (NIROP) in Pittsfield, MA. These projects are essential to correct environmental, safety, and energy conservation deficiencies. NIROP improvements in FY21 include scheduled Americans with Disabilities Act (ADA) compliance upgrades to three elevators. Cost code 2.2 reflects increased funding required for design maturity of Auxiliary Systems Technology Refresh (ASTR) #3. Cost code 2.4 provides a refresh of the existing SSP Advanced Inventory and Logistics (SAIL) system to include software and hardware procurements necessary for the system to meet Information Assurance (IA) compliance requirements. Cost code 2.6 funding provides procurement of hardware and software for the Shipboard Planning Operational Flexibility (SPOF, formerly referred to as RT-WEG) program, consisting of updates to the fire control system requested by USSTRATCOM to create a Submarine Launched Ballistic Missile (SLBM) flexibility and efficiency enhancement program. Additional information on this program can be provided at a higher classification level.

Navigation Equipment: Cost code 3.3 funding in FY20 completed factory test equipment refresh to Non-Inertial Navigation Sonar System (NSS) and the Frequency Standard module as well as a series of high complexity tests for non-inertial and inertial Navigation components. FY21 efforts procure system spares.

Instrumentation/Missile Test Equipment: Funding in all years provides for shore based and shipboard test instrumentation equipment in support of missile flight tests. Cost code 4.1 funds the procurement of umbilical cable shipsets which support the TRIDENT unique portion of the Range refresh of the Command Destruct Transmitter. Cost code 4.4 FY20 completed procurement of network encryption devices. Cost code 4.5 provides updates to the range safety systems that support TRIDENT II D5LE SSBN launch points for live fire missile launch operations. These systems are approaching their useful design life, and utilizing aging equipment introduces risk to the safety of all parties involved in live fire missile launch operations.

Information Technology: Cost code 5.1 funding in all years provides for IT equipment acquisitions (hardware and related software) in support of the Strategic Systems Programs. This includes the IT hardware and software components connected to the Strategic Weapons System Network (SWSNET). FY21 decrease is due to the completion of required upgrades to telephone software and equipment to interface with Voice Over IP (VOIP) technology in FY20.

ALTERATIONS

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		

Alterations to non-flying tactical hardware are continuing requirements for the SWS. Requirements relate primarily to shipboard investments in Commercial-off-the-Shelf/Non-Developmental Items (COTS/NDI) SWS subsystem equipment, including periodic refresh cycles, to ensure continued reliable performance of the weapon system for its extended service life to match the OHIO Class life extension. Strategic Programs Alterations (SPALTs) also entail the application of available technology to eliminate personnel safety hazards, correct design deficiencies, maintain system effectiveness by resolving equipment operability problems, achieve logistic economies, and provide for shipboard subsystem D5 life extension modernization efforts.

Funds are required to procure alterations to the SWS launcher and fire control subsystems; to inertial, non-inertial, and ESGN navigation subsystem equipment on deployed SSBNs and installed at supporting shore facilities, and to missile handling equipment, missile test and readiness equipment, and surface support equipment. Installation of approved SPALTs is performed on a turnkey basis in conjunction with the procurement of equipment. Use of COTS/NDI has been initiated and is being implemented in all subsystems, wherever possible.

Launcher and Handling Equipment: Cost code 6.4 increase from FY20 to FY21 due to the procurement of Launcher hardware for the Strategic Weapon System Ashore (SWSA) Test Facility. Other major Launcher SPALT activities include Maintenance Platform refresh, Ejector Group Handling Equipment (EGHE) refresh, Variable Energy Eject (VEE) Actuator refurbishment and Davit SPALT to address aging and obsolescence issues.

Fire Control Equipment: Cost code 7.1 funds the planned refresh of the Portable Computing Devices (PCD). PCDs are refreshed every 9 years, with the first year of the refresh cycle dedicated to PCD Development and Qualification tasks, and the second year for procurement and Acceptance Test. Cost code 7.2 funding in FY21 supports refreshes of the fire control software (FCS). Increase from FY20 to FY21 is due to the design maturation plus verification and validation required for FCS X56. This funding also accounts for all corresponding training, auxiliary system, fleet documentation products, and the FC software program system integrator role.

Navigation Equipment: Cost codes 8.3-8.4, the TSSS Transducer and the Navigation Software SPALT efforts, have undergone a comprehensive replan to account for delays in Inc 8 development and subsequent reduced scope of Inc 15. Funding in FY21 provides support for efforts in problem correction, fleet documentation, and system modeling and simulations related to the Navigation system. Transducer (non-inertial) and Navigation SPALTS are being procured to replace legacy equipment. Additionally, FY21 efforts will continue to support testing of Navigation software code. Cost code 8.3 funding for the procurement of TR-143A material and assembly, which replenish transducer stock for OHIO SSBNs, is reduced from FY 2020 to FY 2021. Cost code 8.4 provides funding in FY21 for Tactical and Trainer efforts for TR-E1 to begin. TR-E1 provides updates to the navigation software in order to resolve issues arising with Inc 8 initial outfitting. Cost code 8.6 in FY21, the program will begin development of the Broadband Navigation SONAR Navigation Sonar System (BBNS), which is transitioning from a Small Business Innovation Research (SBIR) project to a production effort. This initiative will focus on the modernization and extension of the existing NNS technology developed in the 1970s and will remove operational constraints within current system and reduce sensitivity to operational environments.

Instrumentation/Missile Checkout equipment: Cost code 9.1 FY21 funding provides for Forecast Instrumentation SPALT for hardware modification to submarine instrumentation of flight systems.

The majority of the Alterations funding supports the Shipboard System Integration (SSI) program which utilizes a COTS based strategy that integrates common electronics (from Fire Control, Launcher, Navigation and Shipboard Data Recording Systems) into the fire control sub-system as well as refreshing inertial systems in order to ensure the TRIDENT II (D5) weapon system can be sustained to FY42 in support of OHIO Class SSBNs.

Below is a description of each current SSI Increment (Inc):

SSI Inc 8: Inc 8 provides replacement of the 30 year old Electrostatic Gyro Navigator (ESGN) which needs a refresh of inertial technology components, replacement of the Electronic Equipment Consoles (EEC), and updates to Navigation Subsystem software to accommodate the ESGN replacement navigator. Also, provides SWS subsystem SPALTs for FCS and TTF NAV Lab trainers, and SDS/DRS Software SPALT changes which are driven by data requirement changes. The SHIPALTs retain NAV Center bedplate, cabling, chilled water/ventilation, and retain electrical power. The current ESGN was designed and deployed in the early 1980s with a 20 year designed service live. This refresh is critical to ensure the program continues to meet STRATCOM requirements, and to ensure the operational availability of the OHIO, VANGUARD, COLUMBIA and DREADNOUGHT SSBNs.

Inc 8 efforts in FY21 include:

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		

-Cost code 10.3 funding for Gyroscope and Inertial Navigation System (INS) performance and qualification testing; trainer integration testing and install
-Cost code 10.4 funding for support of Subsystem Qualifications and system Production Readiness Review (PRR)
-Cost code 10.5 funding for the procurement of 35 gyroscopes, plus life of type buy (LOTB) of critical optical components
-Cost Code 10.6 funding for the procurement of spares and On Board Repair Parts (OBRPs) required for deploying Inc 8 SPALT
-Cost Code 10.7 funding for the procurement of 9 INS builds
-Cost code 10.8 funding for SHIPALT installation planning and SHIPALT material kits

SSI Inc 11: Launcher Initiation System (LIS) is being developed for backfit onto OHIO Class D5LE. This provides a technical refresh of 30+ year old technology to ensure long term system reliability. SHIP/SWSS SHIPALT is to replace electrical cable with hybrid fiber-optic/electrical cable.

Inc 11 efforts in FY21 include:
-Cost code 11.5 funds the procurement of Launcher SSI Inc 11 two (2) shipsets of Laser Firing Units
-Cost code 11.6 funds the installation of Fiber Optic Cables
-Cost code 11.7 funds the installation of LIS SPALT kits

SSI Inc 13: Inc 13 provides Shipboard Systems Refresh for FCS, NAV, and Missile Test and Readiness Equipment (MTRE) for integration with the subsystems.

Inc 13 efforts in FY21 include:
-Cost code 12.1 funding MTRE refresh to integrate with Fire Control software changes for SSI Inc 13
-Cost code 12.8 funds the procurement of Fire Control SSI Inc 13 Electronics' Refresh SPALTS Kits with a quantity 6
-Cost code 12.9 funds the installation of Inc 13 Fire Control and Navigation updates

SSI Inc 15: Inc 15 provides pre-configuration and post-configuration support of Inc 8 and Inc 11. Inc 15 is a critical path and the baseline for the deployment of the COLUMBIA Class SSBN. Inc 15 involves refreshes to several subsystems such as alterations for fire control equipment, navigation, launcher, and trainer subsystems. Due to the developmental challenges experienced for SSI Inc 8 during the engineering and test phase, Strategic Systems Programs (SSP) reduced the efforts of SSI Inc 15 to the minimally required effort to address obsolescence issues which are required for the SWS to be the initial baseline for the COLUMBIA class SSBN.

Inc 15 efforts in FY21 include:
-Cost code 13.2 funding for Fire Control SSI Inc 15 development, as system is readied for its System Critical Design Review (SCDR) in FY21. Also provides funds to perform requirements analysis for commonality opportunities, conduct common architecture and technology trade reviews, capture target architecture in descriptive models; develop, build and perform a demonstration of an architecture for a System Integration and Test Environment, to support future SSI increments.
-Cost code 13.3 funding for hardware required for Inc 15 updates to the Fire Control system. FY21 funding for pre-production tooling and facilitization.
-Cost code 13.4 funding for preliminary Launcher SSI Inc 15 refresh/redesign efforts

SSI Inc 16: Inc 16 provides Fire Control Subsystem refresh of SSI Inc 13 components, technical refresh of Shipboard Data System (SDS) subsystems, technical refresh of Navigation SSI Inc 4, and technical refresh of Launcher Variable Energy Eject (VEE) actuators to address obsolesce to sustain the fleet.

Inc 16 efforts in FY21 include:
-Cost code 14.1 funding to perform requirements analysis for commonality opportunities, conduct common architecture and technology trade reviews, capture target architecture in descriptive models; develop, build and perform a demonstration of an architecture for a System Integration and Test Environment, to support future SSI increments.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		

TRAINING SUPPORT EQUIPMENT

This category provides for procurement of, and alterations to, both tactical and non-tactical equipment required at submarine training facilities to train personnel in the operation and maintenance of launcher and handling, fire control, navigation, missile checkout, and test instrumentation subsystems. Each training facility consists of an integrated family of system and unit laboratories that interface with a training simulation system to provide complete and realistic training for replacement and off-crew personnel, both officer and enlisted, as required for manning of SSBNs and shore facilities. Funding is budgeted to procure training-unique equipment required as the result of alterations to SWS tactical equipment, including those associated with D5 life extension.

Funds in cost code 15.1 are required for software and hardware design modification, lab documentation modification, facility modification, and design and system integration, as well as procurement and fabrication of all hardware needed to support Navigation and Fire Control subsystem training at both TTF, Bangor, and at TTF, Kings Bay.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4	P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip	Aggregated Items Title: Strategic Missile Systems 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 ($ 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) Other Material Support- Launcher and Handling Equipment																				
1.1) Casting Powder Lot Buy	A		1,926.333	9	17.337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) Gas Generator Production(†)	A		314.513	76	23.903	340.249	10	3.402	347.055	10	3.471	353.996	10	3.540	-	-	-	353.996	10	3.540
1.3) Gas Generator Case Hardware (1)	A		-	-	-	-	-	-	-	-	-	-	-	2.995	-	-	-	-	-	2.995
1.4) Launch Tube Closures	A		533.218	55	29.327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) Ballast Production(†)	A		442.475	40	17.699	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Ballast Installation	A		-	-	-	-	-	0.360	-	-	1.301	-	-	0.331	-	-	-	-	-	0.331
Subtotal: 1) Other Material Support- Launcher and Handling Equipment			**-**	**-**	***88.266***	**-**	**-**	***3.762***	**-**	**-**	***4.772***	**-**	**-**	***6.866***	**-**	**-**	**-**	**-**	**-**	***6.866***
2) Other Material Support-Fire Control Equipment																				
2.1) Nirop Capital Maintenance (2)	A		-	-	32.013	-	-	5.724	-	-	3.629	-	-	7.699	-	-	-	-	-	7.699
2.2) Fire Control Auxillary Support Equipment (3)	A		-	-	15.304	-	-	-	-	-	1.234	-	-	5.797	-	-	-	-	-	5.797
2.3) D5 Targeting Hardware	A		-	-	3.410	-	-	0.890	-	-	0.909	-	-	0.927	-	-	-	-	-	0.927
2.4) Advanced Inventory Logistics (SAIL) (4)	A		-	-	5.934	-	-	0.432	-	-	1.155	-	-	3.031	-	-	-	-	-	3.031
2.5) Targeting Software Refresh	A		-	-	35.640	-	-	10.950	-	-	11.279	-	-	11.617	-	-	-	-	-	11.617
2.6) SPOF (formerly RT - WEG) (5)	A		-	-	-	-	-	-	-	-	6.070	-	-	17.871	-	-	-	-	-	17.871
Subtotal: 2) Other Material Support- Fire Control Equipment			**-**	**-**	***92.301***	**-**	**-**	***17.996***	**-**	**-**	***24.276***	**-**	**-**	***46.942***	**-**	**-**	**-**	**-**	**-**	***46.942***
3) Other Material Support-Navigation Equipment																				
3.1) Stable Platform and Housing Material Kits(†)	A		366.485	33	12.094	393.271	4	1.573	-	-	-	-	-	-	-	-	-	-	-	-
3.2) Shock Isolation System Kits(†)	A		742.750	24	17.826	791.441	4	3.166	-	-	-	-	-	-	-	-	-	-	-	-
3.3) Factory Test Equipment (6)	A		-	-	4.763	-	-	1.583	-	-	7.711	-	-	1.145	-	-	-	-	-	1.145
Subtotal: 3) Other Material Support- Navigation Equipment			**-**	**-**	***34.683***	**-**	**-**	***6.322***	**-**	**-**	***7.711***	**-**	**-**	***1.145***	**-**	**-**	**-**	**-**	**-**	***1.145***

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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)
4) Other Material Support- Instrumentation/Missile Checkout Equipment																				
4.1) Umbilical Sets/ Kits(†)	A		1,948.000	4	7.792	2,742.000	1	2.742	2,797.000	1	2.797	2,853.000	1	2.853	-	-	-	2,853.000	1	2.853
4.2) Fire Suppression System	A		-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) Electronic Documentation Refresh	A		-	-	1.852	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) Data System Integration (7)	A		-	-	2.647	-	-	0.435	-	-	0.443	-	-	-	-	-	-	-	-	-
4.5) Flight Test Instrumentation (FTI) Refresh (8)	A		-	-	43.426	-	-	1.103	-	-	11.836	-	-	4.829	-	-	-	-	-	4.829
4.6) Range Systems Refresh	A		-	-	-	-	-	1.161	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) Other Material Support- Instrumentation/Missile Checkout Equipment			**-**	**-**	***56.017***	**-**	**-**	***5.441***	**-**	**-**	***15.076***	**-**	**-**	***7.682***	**-**	**-**	**-**	**-**	**-**	***7.682***
5) Other Material Support- Information Technology																				
5.1) Hardware/ Software IT Procurement (9)	A		-	-	21.171	-	-	3.319	-	-	5.775	-	-	3.425	-	-	-	-	-	3.425
Subtotal: 5) Other Material Support- Information Technology			**-**	**-**	***21.171***	**-**	**-**	***3.319***	**-**	**-**	***5.775***	**-**	**-**	***3.425***	**-**	**-**	**-**	**-**	**-**	***3.425***
6) Alterations-Launcher and Handling Equipment																				
6.1) Detonator Power Assembly SPALT	A		2,810.000	1	2.810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.2) Detonator Relay Box SPALT	A		1,902.000	2	3.804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3) Hoist(†)	A		1,573.500	10	15.735	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.4) Launcher SPALTs (10)	A		-	-	43.782	-	-	14.148	-	-	13.783	-	-	16.719	-	-	-	-	-	16.719
Subtotal: 6) Alterations-Launcher and Handling Equipment			**-**	**-**	***66.131***	**-**	**-**	***14.148***	**-**	**-**	***13.783***	**-**	**-**	***16.719***	**-**	**-**	**-**	**-**	**-**	***16.719***
7) Alterations-Fire Control Equipment																				
7.1) Portable Computing Devices (PCD) Refresh SPALT (11)	A		-	-	2.833	-	-	-	-	-	-	-	-	1.201	-	-	-	-	-	1.201
7.2) Minor SPALTS (12)	A		-	-	21.879	-	-	11.506	-	-	11.736	-	-	12.312	-	-	-	-	-	12.312
Subtotal: 7) Alterations-Fire Control Equipment			**-**	**-**	***24.712***	**-**	**-**	***11.506***	**-**	**-**	***11.736***	**-**	**-**	***13.513***	**-**	**-**	**-**	**-**	**-**	***13.513***

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			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) Alterations-Navigation Equipment																				
8.1) Navigation Sonar System (NSS) Sensor Qualification	A		-	-	17.285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) Legacy ESGN SPALTs	A		-	-	18.440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.3) TSSS Transducer SPALTs (13)	A		-	-	6.389	-	-	3.334	-	-	3.400	-	-	1.378	-	-	-	-	-	1.378
8.4) Navigation Software SPALTs (14)	A		-	-	16.304	-	-	1.227	-	-	1.251	-	-	3.204	-	-	-	-	-	3.204
8.5) GPS Antenna Refresh	A		-	-	5.525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6) Broadband Navigation SONAR System (15)	A		-	-	-	-	-	-	-	-	-	-	-	1.787	-	-	-	-	-	1.787
Subtotal: 8) Alterations-Navigation Equipment			**-**	**-**	***63.943***	**-**	**-**	***4.561***	**-**	**-**	***4.651***	**-**	**-**	***6.369***	**-**	**-**	**-**	**-**	**-**	***6.369***
9) Alterations-Instrumentation/Missle Checkout Equipment																				
9.1) Forecast Instrumentation SPALTs	A		-	-	6.001	-	-	0.804	-	-	0.820	-	-	0.836	-	-	-	-	-	0.836
Subtotal: 9) Alterations-Instrumentation/Missle Checkout Equipment			**-**	**-**	***6.001***	**-**	**-**	***0.804***	**-**	**-**	***0.820***	**-**	**-**	***0.836***	**-**	**-**	**-**	**-**	**-**	***0.836***
10) SSI Increment 8																				
10.1) Navigation SSI Increment 8 Pre-Production Gyroscope	A		400.000	30	12.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.2) Navigation SSI Increment 8 Pre-Production Inertial Navigation System	A		1,500.000	8	12.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.3) Navigation SSI Increment 8 Engineering and Test	A		-	-	224.147	-	-	66.017	-	-	57.418	-	-	23.833	-	-	-	-	-	23.833
10.4) Navigation SSI Increment 8 Independent verification and validation	A		-	-	14.066	-	-	3.219	-	-	3.283	-	-	3.348	-	-	-	-	-	3.348
10.5) Navigation SSI Increment 8 Production Gyroscope (16)(†)	A		788.273	33	26.013	830.774	31	25.754	392.075	67	26.269	317.514	35	11.113	-	-	-	317.514	35	11.113

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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)
10.6) Navigation SSI Increment 8 On Board Repair Parts (OBRPs)	A		-	-	3.000	-	-	7.439	-	-	15.239	-	-	8.844	-	-	-	-	-	8.844
10.7) Navigation SSI Increment 8 Production INS (17)(†)	A		-	-	-	3,778.000	2	7.556	-	-	-	2,902.333	9	26.121	-	-	-	2,902.333	9	26.121
10.8) Navigation SSI Increment 8 SHIPALT / Installation	A		-	-	1.426	-	-	1.220	-	-	5.856	-	-	5.806	-	-	-	-	-	5.806
Subtotal: 10) SSI Increment 8			**-**	**-**	***292.652***	**-**	**-**	***111.205***	**-**	**-**	***108.065***	**-**	**-**	***79.065***	**-**	**-**	**-**	**-**	**-**	***79.065***
11) SSI Increment 11																				
11.1) Launcher SSI Increment 11 LIS Redesign	A		-	-	10.288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.2) Launcher Increment 11 System Integration Testing	A		-	-	5.404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.3) Launcher SSI Increment 11 LIS Support Equipment/ Fiberoptic Cables	A		-	-	3.496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.4) Launcher SSI Increment 11 LIS Engineering and Test	A		-	-	10.973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)(†)	A		1,807.000	14	25.298	1,670.000	2	3.340	1,704.000	2	3.408	1,789.000	2	3.578	-	-	-	1,789.000	2	3.578
11.6) Launcher SSI Increment 11 LIS Fiberoptic Cables Installation	A		-	-	3.202	-	-	1.551	-	-	0.911	-	-	0.844	-	-	-	-	-	0.844
11.7) Fire Control SSI Increment 11 LIS SPALT Installs	A		-	-	7.624	-	-	1.595	-	-	0.880	-	-	0.898	-	-	-	-	-	0.898
Subtotal: 11) SSI Increment 11			**-**	**-**	***66.285***	**-**	**-**	***6.486***	**-**	**-**	***5.199***	**-**	**-**	***5.320***	**-**	**-**	**-**	**-**	**-**	***5.320***
12) SSI Increment 13																				
12.1) Instrumentation/ Missile SSI Increment 13 MTRE Refresh	A		-	-	15.325	-	-	6.248	-	-	6.295	-	-	7.765	-	-	-	-	-	7.765
12.2) Navigation SSI Increment 13 Refresh/ Redesign	A		-	-	54.566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.3) Navigation SSI Increment 13 Shipalt	A		-	-	0.575	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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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)
12.4) Navigation SSI Increment 13 Independent Verification & Validation	A		-	-	0.880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production(†)	A		536.000	6	3.216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.6) Navigation SSI Increment 13 On Board Repair Parts (OBRPs)	A		-	-	0.551	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7) Fire Control SSI Increment 13 Refresh/ Redesign	A		-	-	70.293	-	-	13.078	-	-	3.739	-	-	-	-	-	-	-	-	-
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits(†)	A		-	-	-	2,349.167	6	14.095	2,342.833	6	14.057	2,354.833	6	14.129	-	-	-	2,354.833	6	14.129
12.9) Fire Control and Navigation SSI Increment 13 Installation (19)	A		-	-	-	-	-	0.855	-	-	1.777	-	-	2.817	-	-	-	-	-	2.817
Subtotal: 12) SSI Increment 13			**-**	**-**	***145.406***	**-**	**-**	***34.276***	**-**	**-**	***25.868***	**-**	**-**	***24.711***	**-**	**-**	**-**	**-**	**-**	***24.711***
13) SSI Increment 15																				
13.1) Navigation SSI Increment 15 Refresh/ Redesign	A		-	-	0.935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.2) Fire Control SSI Increment 15 Refresh/ Redesign (20)	A		-	-	1.417	-	-	22.349	-	-	18.054	-	-	24.355	-	-	-	-	-	24.355
13.3) Fire Control SSI Increment 15 Production (21)	A		-	-	-	-	-	-	-	-	-	-	-	0.883	-	-	-	-	-	0.883
13.4) Launcher SSI Increment 15 Refresh/ Redesign	A		-	-	-	-	-	1.029	-	-	1.063	-	-	1.084	-	-	-	-	-	1.084
Subtotal: 13) SSI Increment 15			**-**	**-**	***2.352***	**-**	**-**	***23.378***	**-**	**-**	***19.117***	**-**	**-**	***26.322***	**-**	**-**	**-**	**-**	**-**	***26.322***
14) SSI Increment 16																				
14.1) SSI Increment 16 Refresh/Redesign	A		-	-	-	-	-	-	-	-	-	-	-	7.227	-	-	-	-	-	7.227
Subtotal: 14) SSI Increment 16			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***7.227***	**-**	**-**	**-**	**-**	**-**	***7.227***
15) Training Support Equipment																				
15.1) Training Support Equipment (22)	A		-	-	109.153	-	-	10.375	-	-	12.084	-	-	12.768	-	-	-	-	-	12.768

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			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: 15) Training Support Equipment			-	-	*109.153*	-	-	*10.375*	-	-	*12.084*	-	-	*12.768*	-	-	-	-	-	*12.768*
Total			-	-	1,069.073	-	-	253.579	-	-	258.933	-	-	258.910	-	-	-	-	-	258.910

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) Funding for the procurement and qualification of Gas Generator Case Hardware required to replace cases for expended/fired GGs. Funding in this category fluctuates year to year due to test schedules.

(2) NIROP improvements in FY21 include scheduled Americans with Disabilities Act compliance upgrades to three elevators.

(3) Reflects increase funding required for design maturity of Auxiliary Systems Technology Refresh (ASTR) #3

(4) Increase from FY20 to FY21 provides for specific updates in support of the existing SSP Advanced Inventory and Logistics (SAIL) system to include software and hardware procurements necessary for the system to meet Information Assurance (IA) compliance requirements.

(5) Funding provides procurement of hardware and software for the Shipboard Planning Operational Flexibility (SPOF, formerly referred to as RT-WEG) program, consists of updates to the fire control system requested by USSTRATCOM to create a SLBM flexibility and efficiency enhancement program. Additional information on this program can be provided at a higher classification level. SPOF efforts significantly increase from FY20 to FY21 as hardware evaluation and qualification, software development, and safety analyses begin which are required to update the fire control system.

(6) Funding in FY 2020 completed factory test equipment refresh to Non-Inertial Navigation Sonar System (NSS) and the Frequency Standard module as well as a series of high complexity tests for non-inertial and inertial Navigation components. FY21 procures system spares.

(7) Completes procurement of network encryption devices, going forward, these devices will be refurbished.

(8) This line provides funding for 16 different range safety systems that support TRIDENT II D5LE SSBN launch points for live fire missile launch operations. The various systems are on different refresh cycles causing fluctuations in year to year costs. Additionally, the range safety systems vary in size and complexity, so a smooth escalation profile is not expected. Near-term upgrades include a refresh to the SONAR Communications Set (WQC-6), which provides acoustic-based SONAR communication between a submerged Trident SSBN and the Launch Area Support Ship during missile launch tests. Refresh of the Flight Test Support System, Fourth Generation (FTSS IV), which provides real-time data for range safety, receives and records translated GPS and missile telemetry data, and provides communications with range participants to ensure range safety. FY21 efforts also include replacement of the Antenna and Pedestal for the C-Band Radar System that collects radar data during a Trident submarine launched ballistic missile tests in the terminal area.

(9) FY21 efforts include upgrades to video conferencing equipment to interface with Voice Over IP (VOIP) technology.

(10) Increase from FY20 to FY21 due to the procurement of Launcher hardware at the Strategic Weapon System Ashore (SWSA) Test Facility scheduled for FY21. Launcher Hardware includes: Shipping and Storage Equipment, Valve Assemblies, Cable Assemblies, Standpipes, Stanchions. As SPALTs are implemented within the SSBN Launcher system, it is critical that the launcher hardware and equipment is refreshed at test facilities to match the system configurations aboard the submarines.

(11) FY21 funds the planned refresh of the Portable Computing Devices (PCD). PCDs are refreshed every 9 years, with the first year of the refresh cycle dedicated to PCD Development and Qualification tasks, and the second year for procurement and Acceptance Test

(12) Funding in FY21 supports refreshes of the fire control software (FCS) with requirements and design maturation plus verification and validation for FCS X56.

(13) The TSSS Transducer SPALT efforts have undergone a comprehensive replan to account for delays in Inc 8 development and subsequent reduced scope of Inc 15. Procurement of TR-143A material and assembly, which replenish transducer stock for OHIO SSBNs, reduced from FY 2020 to FY 2021.

(14) In FY 2021, Tactical and Trainer efforts for TR-E1 begin. TR-E1 provides updates to the navigation software in order to resolve issues arising with Inc 8 initial outfitting.

(15) In FY21, the program will begin development of the Broadband Navigation SONAR Navigation Sonar System (BBNS).

(16) Gyroscope units for the OHIO Class SSBNs are produced on a shared production line with the COLUMBIA (CLB) SSBN and United Kingdom (UK) VANGUARD and DREADNOUGHT submarines, and this budget only reflects the OHIO quantities. Unit pricing in years 2017-2021 is not reflective of true unit pricing due to procurements in those years of life of type materials, and production special test equipment. Total quantity variation also effects the unit costs reflected. In FY19, a total of 31 units were procured across all platforms. In FY20, a total of 67 units are being procured. In FY21, a total of 35 units are being procured.

(17) INS units for the OHIO Class SSBNs are produced on a shared production line with the COLUMBIA (CLB) SSBN and United Kingdom (UK) VANGUARD and DREADNOUGHT submarines. Total production line quantities in FY19 were 2. In FY20, funding for US production was reallocated to Increment 8 development, but UK quantities continued to be procured. Total production line quantities in FY21 are 9, across all platforms.

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(18) Although two Lasing Firing Unit Assemblies are procured each fiscal year, each assembly is comprised of multiple subcomponents. Unit pricing is not reflective of true unit prices as subcomponents are procured in bulk to take advantage of Economic Ordering Quantity (EOQ) savings.

(19) Inc 13 installs are dependent on SSBN availability. Annual cost fluctuations are expected as some kits are scheduled for shore installation and others are scheduled for ship installations. Shore installs are less complex and therefore cost less than ship installs.

(20) The basis of estimate for Inc 15 Development efforts are based on the lessons learned from prior development efforts associated with Inc 2, Inc 4, and Inc 13. As with previous Increments, a ramping up in effort is required as the program approaches certain development milestones. Inc 15 Fire Control efforts are ramping up in FY21 to be ready for the program's System Critical Design Review (SCDR), scheduled for FY21.

(21) FY 2021 funding for pre-production tooling and facilitization.

(22) Annual requirement fluctuations in this category are expected as training-unique equipment is procured as a result of alterations to SWS tactical equipment. Therefore, as alteration development and installations fluctuates, the training components would also be expected to fluctuate. Specifically in FY21, the program plans to begin development of Inc 15 related simulation training. Funding is required in FY21 in order to meet Inc 15 SPALT development schedules.

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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) Other Material Support- Launcher and Handling Equipment												
1.2) Gas Generator Production		2016	NORTHROP GRUMMAN (23) / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2016	Mar 2018	8	320.625	Y		
1.2) Gas Generator Production		2017	NORTHROP GRUMMAN (23) / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2017	Mar 2019	8	327.038	Y		
1.2) Gas Generator Production		2018	NORTHROP GRUMMAN (23) / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2018	Mar 2020	8	333.578	Y		
1.2) Gas Generator Production		2019	NORTHROP GRUMMAN (23) / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2019	Mar 2021	10	340.249	Y		
1.2) Gas Generator Production		2020	NORTHROP GRUMMAN (23) / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2020	Mar 2022	10	347.055	Y		
1.2) Gas Generator Production		2021	NORTHROP GRUMMAN (23) / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2021	Mar 2023	10	353.996	Y		
1.5) Ballast Production(†)		2017	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Mar 2017	Mar 2018	15	437.000	Y		
1.5) Ballast Production(†)		2018	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Mar 2018	Mar 2019	25	445.760	Y		
3) Other Material Support-Navigation Equipment												
3.1) Stable Platform and Housing Material Kits		2016	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2015	Oct 2017	5	371.000	Y		
3.1) Stable Platform and Housing Material Kits		2017	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2016	Oct 2018	2	378.000	Y		
3.1) Stable Platform and Housing Material Kits		2018	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2017	Oct 2019	4	385.560	Y		
3.1) Stable Platform and Housing Material Kits		2019	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2018	Oct 2020	4	393.271	Y		
3.2) Shock Isolation System Kits		2015	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Feb 2015	Feb 2016	6	733.000	Y		
3.2) Shock Isolation System Kits		2016	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2015	Oct 2016	6	747.000	Y		
3.2) Shock Isolation System Kits		2017	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2016	Oct 2017	2	760.708	Y		
3.2) Shock Isolation System Kits		2018	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2017	Oct 2018	4	775.922	Y		
3.2) Shock Isolation System Kits		2019	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2018	Oct 2019	4	791.441	Y		
4) Other Material Support- Instrumentation/Missile Checkout Equipment												

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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
4.1) Umbilical Sets/Kits		2019	Lockheed Martin / Sunnyvale,CA	C / CPIF	Washington Navy Yard, DC	Oct 2018	Oct 2021	1	2,742.000	Y		
4.1) Umbilical Sets/Kits		2020	Lockheed Martin / Sunnyvale,CA	C / CPIF	Washington Navy Yard, DC	Oct 2019	Oct 2022	1	2,797.000	Y		
4.1) Umbilical Sets/Kits		2021	Lockheed Martin / Sunnyvale,CA	C / CPIF	Washington Navy Yard, DC	Oct 2020	Oct 2023	1	2,853.000	Y		
6) Alterations-Launcher and Handling Equipment												
6.3) Hoist		2016	NORTHROP GRUMMAN / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Oct 2015	Jan 2018	2	1,613.000	Y		
10) SSI Increment 8												
10.5) Navigation SSI Increment 8 Production Gyroscope (16)(†)		2017	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	May 2017	May 2019	9	382.500	Y		
10.5) Navigation SSI Increment 8 Production Gyroscope (16)(†)		2018	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Jan 2018	Jan 2020	24	431.458	Y		
10.5) Navigation SSI Increment 8 Production Gyroscope (16)(†)		2019	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Nov 2018	Nov 2020	31	830.774	Y		
10.5) Navigation SSI Increment 8 Production Gyroscope (16)(†)		2020 (24)	Lockheed Martin (SSI Increment #8 Gyro Accel) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Jan 2020	Oct 2021	67	392.075	Y		
10.5) Navigation SSI Increment 8 Production Gyroscope (16)(†)		2021 (25)	Lockheed Martin (SSI Increment #8 Gyro Accel) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Jan 2021	Oct 2022	35	317.514	Y		
10.7) Navigation SSI Increment 8 Production INS (17)(†)		2019	Lockheed Martin (SSI Increment #8 Inertial Navigation System (INS)) / Mitchfield,NY	C / CPIF	Washington Navy Yard, DC	Nov 2018	Feb 2020	2	3,778.000	Y		
10.7) Navigation SSI Increment 8 Production INS (17)(†)		2021 (26)	Lockheed Martin (SSI Increment #8 Inertial Navigation System (INS)) / Mitchfield,NY	C / CPIF	Washington Navy Yard, DC	Jan 2021	Apr 2022	9	2,902.333	Y		
11) SSI Increment 11												
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)(†)		2017	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Nov 2016	Aug 2019	2	1,606.000	Y		
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)(†)		2019	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Feb 2019	Nov 2021	2	1,670.000	Y		
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)(†)		2020	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Nov 2019	Aug 2022	2	1,704.000	Y		

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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
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)		2021	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Nov 2020	Aug 2023	2	1,789.000	Y		
12) SSI Increment 13												
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production(†)		2018	Lockheed Martin (SSI Increment #13 SPALT) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Jan 2018	Aug 2018	6	536.000	Y		
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits(†)		2019	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Oct 2018	Oct 2019	6	2,349.167	Y		
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits(†)		2020	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Oct 2019	Oct 2020	6	2,342.833	Y		
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits(†)		2021	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Oct 2020	Oct 2021	6	2,354.833	Y		

(†) indicates the presence of a P-21

Footnotes:

(23) Formerly known as Alliant Tech Systems

(24) In FY20, program made additional investments in test equipment and workforce in order to accellerate production timeline.

(25) Gyroscope units for the OHIO Class SSBNs are produced on a shared production line with the COLUMBIA (CLB) SSBN and United Kingdom (UK) VANGUARD and DREADNOUGHT submarines. In FY21, a total of 84 units are being procured.

(26) INS units for the OHIO Class SSBNs are produced on a shared production line with the COLUMBIA (CLB) SSBN and United Kingdom (UK) VANGUARD and DREADNOUGHT submarines. Total production line quantities in FY21 are 14, across all platforms.

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Items (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
							Calendar Year 2015												Calendar Year 2016												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	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) Other Material Support- Launcher and Handling Equipment																															
1.5) Ballast Production																															
	4	2017	NAVY	15	0	15																									15
	4	2018	NAVY	25	0	25																									25
10) SSI Increment 8																															
10.5) Navigation SSI Increment 8 Production Gyroscope (16)																															
	5	2017	NAVY	9	0	9																									9
	5	2018	NAVY	24	0	24																									24
	5	2019	NAVY	31	0	31																									31
	6	2020	NAVY	67	0	67																									67
	6	2021	NAVY	35	0	35																									35
10.7) Navigation SSI Increment 8 Production INS (17)																															
	7	2019	NAVY	2	0	2																									2
	7	2021	NAVY	9	0	9																									9
11) SSI Increment 11																															
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)																															
Prior Years Deliveries: 12																															
	8	2017	NAVY	2	0	2																									2
	8	2019	NAVY	2	0	2																									2
	8	2020	NAVY	2	0	2																									2
12) SSI Increment 13																															
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																															
	9	2018	NAVY	6	0	6																									6
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																															
	10	2019	NAVY	6	0	6																									6
	10	2020	NAVY	6	0	6																									6
	10	2021	NAVY	6	0	6																									6
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip

Aggregated Items: Strategic Missile Systems Equip

Items (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	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) Other Material Support- Launcher and Handling Equipment																															
1.5) Ballast Production																															
	4	2017	NAVY	15	0	15						A -	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	0
	4	2018	NAVY	25	0	25																		A -	-	-	-	-	-	-	25
10) SSI Increment 8																															
10.5) Navigation SSI Increment 8 Production Gyroscope [16]																															
	5	2017	NAVY	9	0	9								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
	5	2018	NAVY	24	0	24																A -	-	-	-	-	-	-	-	-	24
	5	2019	NAVY	31	0	31																									31
	6	2020	NAVY	67	0	67																									67
	6	2021	NAVY	35	0	35																									35
10.7) Navigation SSI Increment 8 Production INS [17]																															
	7	2019	NAVY	2	0	2																									2
	7	2021	NAVY	9	0	9																									9
11) SSI Increment 11																															
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units [18]																															
Prior Years Deliveries: 12																															
	8	2017	NAVY	2	0	2		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	8	2019	NAVY	2	0	2																									2
	8	2020	NAVY	2	0	2																									2
12) SSI Increment 13																															
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																															
	9	2018	NAVY	6	0	6																A -	-	-	-	-	-	-	1	1	4
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																															
	10	2019	NAVY	6	0	6																									6
	10	2020	NAVY	6	0	6																									6
	10	2021	NAVY	6	0	6																									6
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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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) Other Material Support- Launcher and Handling Equipment																															
1.5) Ballast Production																															
	4	2017	NAVY	15	15	0																									0
	4	2018	NAVY	25	0	25	-	-	-	-	-	2	2	2	2	2	2	3	3	3	2	2									0
10) SSI Increment 8																															
10.5) Navigation SSI Increment 8 Production Gyroscope (16)																															
	5	2017	NAVY	9	0	9	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1									0
	5	2018	NAVY	24	0	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	6
	5	2019	NAVY	31	0	31		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
	6	2020	NAVY	67	0	67																A -	-	-	-	-	-	-	-	-	67
	6	2021	NAVY	35	0	35																									35
10.7) Navigation SSI Increment 8 Production INS (17)																															
	7	2019	NAVY	2	0	2		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1							0
	7	2021	NAVY	9	0	9																									9
11) SSI Increment 11																															
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)																															
Prior Years Deliveries: 12																															
	8	2017	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	1	1													0
	8	2019	NAVY	2	0	2					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	8	2020	NAVY	2	0	2														A -	-	-	-	-	-	-	-	-	-	-	2
12) SSI Increment 13																															
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																															
	9	2018	NAVY	6	2	4	1	1	1	1																					0
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																															
	10	2019	NAVY	6	0	6	A -	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1							0
	10	2020	NAVY	6	0	6													A -	-	-	-	-	-	-	-	-	-	-	-	6
	10	2021	NAVY	6	0	6																									6
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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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) Other Material Support- Launcher and Handling Equipment																															
1.5) Ballast Production																															
	4	2017	NAVY	15	15	0																									0
	4	2018	NAVY	25	25	0																									0
10) SSI Increment 8																															
10.5) Navigation SSI Increment 8 Production Gyroscope (16)																															
	5	2017	NAVY	9	9	0																									0
	5	2018	NAVY	24	18	6	2	2	2																						0
	5	2019	NAVY	31	0	31	-	3	3	3	3	3	3	4	5	4															0
	6	2020	NAVY	67	0	67	-	-	-	-	-	-	-	-	-	-	-	-	1	3	7	7	7	7	7	7	7	7	7		0
	6	2021	NAVY	35	0	35				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
10.7) Navigation SSI Increment 8 Production INS (17)																															
	7	2019	NAVY	2	2	0																									0
	7	2021	NAVY	9	0	9				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	2	1	2	0
11) SSI Increment 11																															
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)																															
Prior Years Deliveries: 12																															
	8	2017	NAVY	2	2	0																									0
	8	2019	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1										0
	8	2020	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0
12) SSI Increment 13																															
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																															
	9	2018	NAVY	6	6	0																									0
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																															
	10	2019	NAVY	6	6	0																									0
	10	2020	NAVY	6	0	6	1	1	1	1	1	1																			0
	10	2021	NAVY	6	0	6	A -	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	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	

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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) Other Material Support- Launcher and Handling Equipment																															
1.5) Ballast Production																															
	4	2017	NAVY	15	15	0																									0
	4	2018	NAVY	25	25	0																									0
10) SSI Increment 8																															
10.5) Navigation SSI Increment 8 Production Gyroscope (16)																															
	5	2017	NAVY	9	9	0																									0
	5	2018	NAVY	24	24	0																									0
	5	2019	NAVY	31	31	0																									0
	6	2020	NAVY	67	67	0																									0
	6	2021	NAVY	35	0	35	3	7	7	7	7	4																			0
10.7) Navigation SSI Increment 8 Production INS (17)																															
	7	2019	NAVY	2	2	0																									0
	7	2021	NAVY	9	9	0																									0
11) SSI Increment 11																															
11.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units (18)																															
Prior Years Deliveries: 12																															
	8	2017	NAVY	2	2	0																									0
	8	2019	NAVY	2	2	0																									0
	8	2020	NAVY	2	2	0																									0
12) SSI Increment 13																															
12.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																															
	9	2018	NAVY	6	6	0																									0
12.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																															
	10	2019	NAVY	6	6	0																									0
	10	2020	NAVY	6	6	0																									0
	10	2021	NAVY	6	6	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 / 04 / 4	**P-1 Line Item Number / Title:** 5358 / Strategic Missile Systems Equip	**Aggregated Items:** Strategic Missile Systems 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	Lockheed Martin - Sunnyvale, CA	15	20	25	0	6	0	6	0	6	0	6
2	Lockheed Martin (SSI Increment #8 Gyroscope) - Mitchfield, NY	10	72	96	0	0	24	24	0	0	24	24
3	Lockheed Martin (SSI Increment #8 Gyro Accel) - Mitchfield, NY	36	72	108	0	0	18	18	0	0	18	18
4	Lockheed Martin (SSI Increment #8 Inertial Navigation System (INS)) - Mitchfield,NY	6	12	16	0	0	15	15	0	0	15	15
5	NORTHROP GRUMMAN (LIS Firing Units (FUs)/ Launch Safing Units (LSUs) - Sunnyvale, CA	2	4	15	0	0	12	12	0	0	9	9
6	Lockheed Martin (SSI Increment #13 SPALT) - Mitchfield, NY	3	5	7	0	0	7	7	0	0	7	7
7	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) - Pittsfield, MA	2	5	15	0	0	12	12	0	0	12	12

"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-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604562N

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)*	810.094	133.651	143.678	173.770	0.000	173.770	160.469	158.631	147.472	151.561	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	810.094	133.651	143.678	173.770	0.000	173.770	160.469	158.631	147.472	151.561	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**810.094**	**133.651**	**143.678**	**173.770**	**0.000**	**173.770**	**160.469**	**158.631**	**147.472**	**151.561**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	1.792	3.885	6.159	-	6.159	4.009	5.032	2.067	1.608	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/BYG-1 is the combat control system common across all submarine platforms which incorporates tactical control, weapon control and Tactical Local Area Network (TacLAN) functions into a single procurement program. AN/BYG-1 allows the submarine Navy to rapidly update the ship safety tactical picture, integrates the common tactical picture into the battlegroup, improves torpedo interfaces and provides tactical TOMAHAWK capability. AN/BYG-1 systems will be continuously updated with hardware enhancements to address Commercial Off The Shelf (COTS) obsolescence and capability improvements as defined by the Advanced Processor Build (APB) process. These updates are referred to as Tech Insertion (TI) kits and are differentiated by year of development (i.e. TI10, TI12, TI14, TI16 etc). The TI upgrades provide the baseline for all future AN/BYG-1 procurements. In addition, this budget also provides tech insertion "kits" to update existing AN/BYG-1 platforms. The AN/BYG-1 nomenclature was adopted in FY05 and out to incorporate the addition of VIRGINIA Class Combat Control System to a common acquisition and development strategy. This allows for AN/BYG-1 to be the common combat control system nomenclature across all submarine platforms.

VB011 - COMBAT SYSTEMS TECHNOLOGY REFRESH / LEGACY INTEGRATION
Procures tactical control hardware upgrades to SSN688, SSN688I, SSBN, SSN 21, and SSGN Class submarines for legacy combat control systems and obsolete legacy launcher systems. These updates provide accelerated delivery of tactical capability to the Fleet and bridge the gap between legacy combat control systems and AN/BYG-1. Procures Engineering Changes (EC) and Ordnance Alterations (ORDALT) to correct fleet reported problems with legacy Combat Control System software and hardware. Procures Weapons Launch System, Multi-tube Weapon System (MTWS) and provides support for fleet introduction of the Common Weapon Launcher (CWL) transition and integration into the TI/APB process. Provides system engineering in support of TacLAN; Cybersecurity for authorization and accreditation; Onboard Team Trainer (OBTT); and Inter Subsystem Monitoring Tool (ISMT). Production of Common Infrastructure Services for future variants will commence in FY20 as a follow onto existing TACLAN efforts. Provides funding for integration of Harpoon BLK 1C into Payload Control System.

VB034 - SUBMARINE COMBAT CONTROL SYSTEM MODERNIZATION PROGRAM
This cost code procures hardware and software upgrades for AN/BYG-1 system for installation on all submarine platforms. Efforts include pre-production, design, hardware production, and integration. Funds are for the installation of Combat Control System equipment included in the Fleet Modernization Program.

VB800 - ELECTRONIC CHARTING DISPLAY INFORMATION 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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604562N
Line Item MDAP/MAIS Code: N/A		

The Submarine Electronic Charting Display Information System - Navy (ECDIS-N) is installed on all U.S. Navy submarine platforms. PEO SUB Submarine Combat and Weapons Control Program Office has program acquisition, contractual, financial, engineering and logistical responsibilities for submarine ECDIS-N systems. This includes conducting submarine Voyage Management System (VMS) VMS 9.3, VMS 9.4, VMS 9.5 and the future Navy-ECDIS integration, testing, ECDIS-N certification, and fielding responsibilities in support of all baselines. Includes Radar System Overlay procurements and installations.

VB995 PRODUCTION ENGINEERING AND INITIAL TRAINING - This cost code procures production and logistics support, assistance for asset management, cost analyses, preparation of contract specifications, monitoring of contract deliverables, contractor cost, schedule and performance monitoring, Integrated Logistics Support (ILS) planning and Government Furnished Information (GFI) coordination. This cost code also provides initial training curriculum development, training management materials, exercise control group development, and pilot services to the Fleet.

VB997 - SSGN SUSTAINING SUPPORT
Provides funding for the Strategic Systems Program (SSP) in support of the procurement, installation and sustainment of equipment required for the life-cycle operational support of SSGN Attack Weapons Systems (AWS) for the four OHIO-class SSGNs. OPN sustaining support funding provides for SSGN AWS logistics acquisition support and for Attack Weapon Control System (AWCS) alterations that provide technical refresh updates to the AWCS and to two shore-based trainers located at Kings Bay, GA and Bangor, WA. The AWCS alterations will provide technical refresh upgrades to include the Tactical TOMAHAWK Weapon Control Systems (TTWCS) 5.4.0.2 and TOMAHAWK Command and Control System (TC2S 5.0.1) software necessary to ensure the long-term safety, reliability and maintainability of the Attack Weapons Control System. TTWCS 5.4.0.2 and TC2S 5.0.1 software are required for the SSGN Strike Operations to continue the Fleet's mission. TTWCS 5.6 is required to maintain compatibility with modernized TOMAHAWK missiles. The modernized TOMAHAWK supports emerging missions for which the SSGN is the prime platform for deployment.

VB700 - PAYLOAD PROCUREMENT
Procurement of payloads to include Unmanned Aerial System (UAS) vehicles for integration, verification, and validation. Procurement entails integrated, modified and tested horizontally and vertically deployed payloads.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity:
1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment

P-1 Line Item Number / Title:
5420 / SSN Combat Control Systems

ID Code (A=Service Ready, B=Not Service Ready): A | **Program Elements for Code B Items:** N/A | **Other Related Program Elements:** 0604562N

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	SSN Combat Control Systems	P-5a			- / 359.010	- / 47.618	- / 63.286	- / 41.263	- / -	- / 41.263
P-3a	1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1 (UPGRADE)				- / 66.576	- / 28.839	- / 27.112	- / 25.413	- / 0.000	- / 25.413
P-3a	2 / VB034 SSBN MODERNIZATION TECH INSERTION (SSBN CLASS)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS (UPGRADE)				- / 22.053	- / 6.356	- / 11.186	- / 4.796	- / 0.000	- / 4.796
P-3a	5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS (UPGRADE)				- / 31.263	- / 4.513	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS (UPGRADE)				- / 224.923	- / 37.160	- / 34.637	- / 15.562	- / 0.000	- / 15.562
P-3a	7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS (UPGRADE)				- / 106.269	- / 9.165	- / 7.457	- / 17.119	- / 0.000	- / 17.119
P-3a	8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 69.617	- / 0.000	- / 69.617
P-40	**Total Gross/Weapon System Cost**				**- / 810.094**	**- / 133.651**	**- / 143.678**	**- / 173.770**	**- / 0.000**	**- / 173.770**

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	SSN Combat Control Systems	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1 (UPGRADE)				- / 7.080	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 155.020
P-3a	2 / VB034 SSBN MODERNIZATION TECH INSERTION (SSBN CLASS)				- / 13.491	- / 23.740	- / 17.197	- / 15.928	- / 7.943	- / 78.299
P-3a	4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS (UPGRADE)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 44.391
P-3a	5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS (UPGRADE)				- / 3.392	- / 8.345	- / 8.511	- / 5.082	- / 0.000	- / 61.106
P-3a	6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS (UPGRADE)				- / 16.989	- / 47.382	- / 36.822	- / 6.738	- / 0.000	- / 420.213
P-3a	7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS (UPGRADE)				- / 11.648	- / 1.984	- / 40.357	- / 59.717	- / 12.632	- / 266.348
P-3a	8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL (TBD)				- / 53.781	- / 9.321	- / 24.626	- / 44.142	Continuing	Continuing
P-40	**Total Gross/Weapon System Cost**				**- / 160.469**	**- / 158.631**	**- / 147.472**	**- / 151.561**	**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:

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604562N
Line Item MDAP/MAIS Code: N/A		

FY21 procures SSN/SSBN shipsets as part of the Submarine Warfare Federated Tactical System (SWFTS) initiative and will install SSN/SSBN/SSGN shipsets procured in FY20. FY21 is the fourth year of procurements for Unmanned Aerial System Blackwing (BW) units. We will continue to procure tactical control hardware upgrades to SSN/SSBN/SSGN Class submarines for legacy combat control systems, Engineering Changes (EC) and Ordnance Alterations (ORDALT) to correct Fleet reported problems with legacy Combat Control System software and hardware. FY21 efforts support continuation of Submarine Launched Harpoon initiatives.

FY21 procures one SSBN, two VA Class, and six VA Class with Common Weapon Launcher (CWL) submarine kits.
The Department's funding request for FY21 increases to reflect the procurement of 6 VA Class shipsets with Common Weapons Launcher (CWL) modernizations. The CWL procurements are significantly more expensive than the regular VA Class shipsets without CWL.

FY21 SSP funding (BSO 30) provides for the procurement, installation and sustainment of equipment required for the life-cycle operational support of SSGN Attack Weapons Systems (AWS) for the four OHIO-class SSGNs. TTWCS 5.6 is currently being developed to maintain compatibility with modernized TOMAHAWK missiles. Refresh efforts continue for the Attack Weapon System Interface Simulator (AWIS), in FY21. The AWIS provides simulation and stimulation support to the Attack Weapon Control System (AWCS) for Operator & Maintenance Training as well as system testing. The current AWIS refresh will address obsolescence issues and enable adequate test and training to be conducted.

FY21 Weapons Launch Systems Tech Insertion line (Cost Code = VB011) funding includes the sustainment of the Common Weapon Launcher (CWL) for Block III and obsolescence management for Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II across the FYDP. The Department has increased funding in FY20 due to ship alterations (all classes) in support of MK48 ADCAP torpedo APB-5+ and APB-6, increase in cybersecurity/safe roles and responsibilities (ship control controlled interface, Strike related issues, posture transition, Cybersecurity/Cybersafe review and implementation for TI-14, TI-16, TI-18), integration of Harpoon BLK 1C into the Payload Control System, increase in systems engineering effort for additional open baselines for all variants and submarine classes, Multi-Tube Weapon Simulator (MTWS) upgrades for Harpoon and MK48 ADCAP torpedo APB-5+ and APB-6 shipboard training, sustainment of the Common Weapon Launcher (CWL) for VA Class Block III, and obsolescence management of the Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II. Funding Increase also supports WLCIE component replacements for components at End of Life. Additional funding for Submarine Launched Harpoon efforts was transferred from PMA 201 TO NAVSEA.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Aggregated Items Title:** SSN Combat Control Systems

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)
1) VB011: COMBAT SYSTEM TECH REFRESH/LEGACY INTEGRATION																				
1.1) VB011: ECP/ AUXILLARY EQUIPMENT / LEGACY INTEGRATION	A		-	-	9.904	-	-	2.164	-	-	2.206	-	-	2.252	-	-	-	-	-	2.252
1.2) VB011: WEAPON LAUNCH SYSTEMS TECH INSERTION (1)	A		-	-	49.713	-	-	14.435	-	-	29.041	-	-	5.984	-	-	-	-	-	5.984
1.3) VB011: TACLAN/ IA	A		-	-	148.980	-	-	12.977	-	-	13.238	-	-	13.501	-	-	-	-	-	13.501
Subtotal: 1) VB011: COMBAT SYSTEM TECH REFRESH/LEGACY INTEGRATION			**-**	**-**	***208.597***	**-**	**-**	***29.576***	**-**	**-**	***44.485***	**-**	**-**	***21.737***	**-**	**-**	**-**	**-**	**-**	***21.737***
2) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM																				
2.1) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM	A		-	-	9.417	-	-	3.334	-	-	3.400	-	-	3.468	-	-	-	-	-	3.468
Subtotal: 2) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM			**-**	**-**	***9.417***	**-**	**-**	***3.334***	**-**	**-**	***3.400***	**-**	**-**	***3.468***	**-**	**-**	**-**	**-**	**-**	***3.468***
3) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING																				
3.1) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING	A		-	-	63.663	-	-	1.753	-	-	1.788	-	-	1.823	-	-	-	-	-	1.823
Subtotal: 3) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING			**-**	**-**	***63.663***	**-**	**-**	***1.753***	**-**	**-**	***1.788***	**-**	**-**	***1.823***	**-**	**-**	**-**	**-**	**-**	***1.823***
4) VB997: SSGN SUSTAINING SUPPORT																				
4.1) VB997: SSGN SUSTAINING SUPPORT (2)	A		-	-	76.459	-	-	10.281	-	-	10.885	-	-	8.670	-	-	-	-	-	8.670
Subtotal: 4) VB997: SSGN SUSTAINING SUPPORT			**-**	**-**	***76.459***	**-**	**-**	***10.281***	**-**	**-**	***10.885***	**-**	**-**	***8.670***	**-**	**-**	**-**	**-**	**-**	***8.670***
5) VB700: PAYLOAD PROCUREMENT																				
5.1) VB700: PAYLOAD PROCUREMENT (3)(†)	A		874,000.00	1	0.874	891,480.00	3	2.674	909,309.60	3	2.728	927,495.80	6	5.565	-	-	-	927,495.80	6	5.565
Subtotal: 5) VB700: PAYLOAD PROCUREMENT			**-**	**-**	***0.874***	**-**	**-**	***2.674***	**-**	**-**	***2.728***	**-**	**-**	***5.565***	**-**	**-**	**-**	**-**	**-**	***5.565***
Total			**-**	**-**	**359.010**	**-**	**-**	**47.618**	**-**	**-**	**63.286**	**-**	**-**	**41.263**	**-**	**-**	**-**	**-**	**-**	**41.263**

Note: Subtotals or Totals in this Exhibit P-40a 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 / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Aggregated Items Title:** SSN Combat Control Systems

(†) indicates the presence of a P-5a

Footnotes:

(1) 1.2) This funding includes the sustainment of the Common Weapon Launcher (CWL) for Block III and obsolescence management for Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II across the FYDP. The Department increased funding in FY20 to fund ship alterations (all classes) in support of MK48 ADCAP torpedo APB-5+ and APB-6, increase in cybersecurity/safe roles and responsibilities (ship control controlled interface, Strike related issues, posture transition, Cybersecurity/Cybersafe review and implementation for TI-14, TI-16, TI-18), integration of Harpoon BLK 1C into the Payload Control System, increase in systems engineering effort for additional open baselines for all variants and submarine classes, Multi-Tube Weapon Simulator (MTWS) upgrades for Harpoon and MK48 ADCAP torpedo APB-5+ and APB-6 shipboard training, sustainment of the Common Weapon Launcher (CWL) for VA Class Block III, and obsolescence management of the Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II. Funding Increase also supports WLCIE component replacements for components at End of Life. Additional funding for Submarine Launched Harpoon efforts was transferred from PMA 201 TO NAVSEA.

(2) (SSP) The modernized TOMAHAWK supports emerging missions for which the SSGN is the prime platform for deployment. TTWCS updates are critical to the ability to fire TOMAHAWK missiles from the SSGNs. Funding also supports the Attack Weapon System Interface Simulator (AWIS) with connectivity which is used in the trainer and development labs to provide necessary inputs and feedback for the AWS. This will also allow the trainer to act as a Fleet Readiness Unit during Fleet exercises. The decrease in funding from FY20 to FY21 is due to the ramping down of development of the TTWCS 5.6 build. Additionally, SSI Increment 6 installation efforts on the AWCS were completed in FY20. FY19 reprogramming action added funds for TTWCS, AWIS, and SSGN connectivity requirements.

(3) 5.1) Beginning in FY18 shipset procurements and associated integration, verification, and validation efforts. Each shipset consists of 12 Unmanned Aerial Vehicles (UAVs) and associated shipboard components.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems	Aggregated Items: SSN Combat Control 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 ($)	Specs Avail Now?	Date Revision Available	RFP Issue Date
5) VB700: PAYLOAD PROCUREMENT												
5.1) VB700: PAYLOAD PROCUREMENT (3)		2018	NUWC Newport / Newport, RI	WR	** NO PCO **	Nov 2017	May 2018	1	874,000.00	N	Oct 2017	
5.1) VB700: PAYLOAD PROCUREMENT (3)		2019	NUWC Newport / Newport, RI	WR	** NO PCO **	Nov 2018	May 2019	3	891,480.00	N	Oct 2018	
5.1) VB700: PAYLOAD PROCUREMENT (3)		2020	NUWC Newport / Newport, RI	WR	** NO PCO **	Nov 2019	May 2020	3	909,309.60	N	Oct 2019	
5.1) VB700: PAYLOAD PROCUREMENT (3)		2021	NUWC Newport / Newport, RI	WR	** NO PCO **	Nov 2020	May 2021	6	927,495.80	N	Oct 2020	

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 1 / VB034 SSBN MODERNIZATION WITH AN/BYG-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)*	66.576	28.839	27.112	25.413	0.000	25.413	7.080	0.000	0.000	0.000	0.000	155.020
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	66.576	28.839	27.112	25.413	0.000	25.413	7.080	0.000	0.000	0.000	0.000	155.020
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**66.576**	**28.839**	**27.112**	**25.413**	**0.000**	**25.413**	**7.080**	**0.000**	**0.000**	**0.000**	**0.000**	**155.020**
(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:

SSBN 726 Class Submarines will be modernized from the CCS MK2 BLOCK 1C system to the TI/APB model.

[EQUIPMENT] Funding is provided for the procurement and installation of SSBN AN/BYG-1 legacy modernization shipsets.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSBN CLASS	**Modification Type:** UPGRADE	**Related RDT&E PEs:** 0604562N

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: VB034 SSBN MODERNIZATION WITH AN/BYG-1												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic	8 / 34.085	2 / 8.825	3 / 13.502	1 / 4.590	- / -	1 / 4.590	- / -	- / -	- / -	- / -	- / -	14 / 61.002
Subtotal: Recurring	*- / 34.085*	*- / 8.825*	*- / 13.502*	*- / 4.590*	*- / -*	*- / 4.590*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 61.002*
Subtotal: VB034 SSBN MODERNIZATION WITH AN/BYG-1	*8 / 34.085*	*2 / 8.825*	*3 / 13.502*	*1 / 4.590*	*- / -*	*1 / 4.590*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*14 / 61.002*
Subtotal: Procurement, All Modification Items	*- / 34.085*	*- / 8.825*	*- / 13.502*	*- / 4.590*	*- / -*	*- / 4.590*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 61.002*
Installation												
Modification Item 1 of 1: VB034 SSBN MODERNIZATION WITH AN/BYG-1	- / 32.491	- / 20.014	- / 13.610	- / 20.823	- / 0.000	- / 20.823	- / 7.080	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 94.018
Subtotal: Installation	*- / 32.491*	*- / 20.014*	*- / 13.610*	*- / 20.823*	*- / -*	*- / 20.823*	*- / 7.080*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 94.018*
Total												
Total Cost (Procurement + Support + Installation)	**66.576**	**28.839**	**27.112**	**25.413**	**0.000**	**25.413**	**7.080**	**0.000**	**0.000**	**0.000**	**0.000**	**155.020**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1

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

Modification Item 1 of 1: VB034 SSBN MODERNIZATION WITH AN/BYG-1

Manufacturer Information

Manufacturer Name: Various | Manufacturer Location: Various

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				
Delivery Dates	Mar 2020	Mar 2021	Mar 2022				

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	5 / 32.491	3 / 20.014	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 52.505
FY 2019	- / -	- / -	2 / 13.610	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 13.610
FY 2020	- / -	- / -	- / -	3 / 20.823	0 / 0.000	3 / 20.823	- / -	- / -	- / -	- / -	0 / 0.000	3 / 20.823
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 7.080	- / -	- / -	- / -	0 / 0.000	1 / 7.080
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 32.491	3 / 20.014	2 / 13.610	3 / 20.823	0 / 0.000	3 / 20.823	1 / 7.080	- / -	- / -	- / -	0 / 0.000	14 / 94.018

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	2	-	-	1	1	-	-	1	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
Out	5	-	-	1	2	-	-	1	1	-	-	1	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	14

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 2 / VB034 SSBN MODERNIZATION TECH INSERTION
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	13.491	23.740	17.197	15.928	7.943	78.299
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	0.000	0.000	0.000	13.491	23.740	17.197	15.928	7.943	78.299
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**13.491**	**23.740**	**17.197**	**15.928**	**7.943**	**78.299**
(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 program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SSBN AN/BYG-1 tech insertion shipsets.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 2 / VB034 SSBN MODERNIZATION TECH INSERTION
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: SSBN CLASS	**Modification Type:** SSBN CLASS	**Related RDT&E PEs:** 0604562N

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: VB034 SSBN MODERNIZATION TECH INSERTION												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	4 / 13.491	4 / 13.761	2 / 7.018	3 / 10.737	- / -	13 / 45.007
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 13.491*	*- / 13.761*	*- / 7.018*	*- / 10.737*	*- / 0.000*	*- / 45.007*
Subtotal: VB034 SSBN MODERNIZATION TECH INSERTION	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*4 / 13.491*	*4 / 13.761*	*2 / 7.018*	*3 / 10.737*	*- / -*	*13 / 45.007*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 13.491*	*- / 13.761*	*- / 7.018*	*- / 10.737*	*- / 0.000*	*- / 45.007*
Installation												
Modification Item 1 of 1: VB034 SSBN MODERNIZATION TECH INSERTION	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.979	- / 10.179	- / 5.191	- / 7.943	- / 33.292
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 9.979*	*- / 10.179*	*- / 5.191*	*- / 7.943*	*- / 33.292*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**13.491**	**23.740**	**17.197**	**15.928**	**7.943**	**78.299**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 2 / VB034 SSBN MODERNIZATION TECH INSERTION

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

Modification Item 1 of 1: VB034 SSBN MODERNIZATION TECH INSERTION

Manufacturer Information

Manufacturer Name: VARIOUS | Manufacturer Location: Various

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 2022	Mar 2023	Mar 2024	Mar 2025
Delivery Dates				Mar 2023	Mar 2024	Mar 2025	Mar 2026

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	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 9.979	- / -	- / -	0 / 0.000	4 / 9.979
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 10.179	- / -	0 / 0.000	4 / 10.179
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 5.191	0 / 0.000	2 / 5.191
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 7.943	3 / 7.943
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 9.979	4 / 10.179	2 / 5.191	3 / 7.943	13 / 33.292

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	-	-	2	2	-	-	1	1	-	3	13
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	2	2	-	-	1	1	3	13

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS
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)*	22.053	6.356	11.186	4.796	0.000	4.796	0.000	0.000	0.000	0.000	0.000	44.391
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	22.053	6.356	11.186	4.796	0.000	4.796	0.000	0.000	0.000	0.000	0.000	44.391
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**22.053**	**6.356**	**11.186**	**4.796**	**0.000**	**4.796**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**44.391**
(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 program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SSGN AN/BYG-1 tech insertion shipsets.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS	**Modification Type:** UPGRADE	**Related RDT&E PEs:** 0604562N

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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic	4 / 10.912	2 / 6.356	2 / 6.484	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 23.752
Subtotal: Recurring	*- / 10.912*	*- / 6.356*	*- / 6.484*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 23.752*
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS	*4 / 10.912*	*2 / 6.356*	*2 / 6.484*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*8 / 23.752*
Subtotal: Procurement, All Modification Items	*- / 10.912*	*- / 6.356*	*- / 6.484*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 23.752*
Installation												
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS	- / 11.141	- / 0.000	- / 4.702	- / 4.796	- / 0.000	- / 4.796	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 20.639
Subtotal: Installation	*- / 11.141*	*- / -*	*- / 4.702*	*- / 4.796*	*- / -*	*- / 4.796*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 20.639*
Total												
Total Cost (Procurement + Support + Installation)	**22.053**	**6.356**	**11.186**	**4.796**	**0.000**	**4.796**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**44.391**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS

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

Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS

Manufacturer Information

Manufacturer Name: Various | Manufacturer Location: Various

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: 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	4 / 11.141	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 11.141
FY 2019	- / -	- / -	2 / 4.702	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.702
FY 2020	- / -	- / -	- / -	2 / 4.796	0 / 0.000	2 / 4.796	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.796
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	4 / 11.141	- / -	2 / 4.702	2 / 4.796	0 / 0.000	2 / 4.796	- / -	- / -	- / -	- / -	0 / 0.000	8 / 20.639

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	-	-	-	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	4	-	-	-	-	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS
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)*	31.263	4.513	0.000	0.000	0.000	0.000	3.392	8.345	8.511	5.082	0.000	61.106
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	31.263	4.513	0.000	0.000	0.000	0.000	3.392	8.345	8.511	5.082	0.000	61.106
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**31.263**	**4.513**	**0.000**	**0.000**	**0.000**	**0.000**	**3.392**	**8.345**	**8.511**	**5.082**	**0.000**	**61.106**
(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 program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SEAWOLF AN/BYG-1 tech insertion shipsets.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS	**Modification Type:** UPGRADE	**Related RDT&E PEs:** 0604562N

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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic	6 / 16.544	- / -	- / -	- / -	- / -	- / -	1 / 3.392	1 / 3.460	1 / 3.529	- / -	- / -	9 / 26.925
Subtotal: Recurring	*- / 16.544*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 3.392*	*- / 3.460*	*- / 3.529*	*- / -*	*- / 0.000*	*- / 26.925*
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS	*6 / 16.544*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 3.392*	*1 / 3.460*	*1 / 3.529*	*- / -*	*- / -*	*9 / 26.925*
Subtotal: Procurement, All Modification Items	*- / 16.544*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 3.392*	*- / 3.460*	*- / 3.529*	*- / -*	*- / 0.000*	*- / 26.925*
Installation												
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS	- / 14.719	- / 4.513	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.885	- / 4.982	- / 5.082	- / 0.000	- / 34.181
Subtotal: Installation	*- / 14.719*	*- / 4.513*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.885*	*- / 4.982*	*- / 5.082*	*- / 0.000*	*- / 34.181*
Total												
Total Cost (Procurement + Support + Installation)	**31.263**	**4.513**	**0.000**	**0.000**	**0.000**	**0.000**	**3.392**	**8.345**	**8.511**	**5.082**	**0.000**	**61.106**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS

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

Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS

Manufacturer Information

Manufacturer Name: Various | Manufacturer Location: Various

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 2022	Mar 2023	Mar 2024	
Delivery Dates				Mar 2023	Mar 2024	Mar 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	5 / 14.719	1 / 4.513	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 19.232
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.885	- / -	- / -	0 / 0.000	1 / 4.885
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.982	- / -	0 / 0.000	1 / 4.982
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.082	0 / 0.000	1 / 5.082
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 14.719	1 / 4.513	- / -	- / -	- / -	- / -	- / -	1 / 4.885	1 / 4.982	1 / 5.082	0 / 0.000	9 / 34.181

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

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS
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)*	224.923	37.160	34.637	15.562	0.000	15.562	16.989	47.382	36.822	6.738	0.000	420.213
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	224.923	37.160	34.637	15.562	0.000	15.562	16.989	47.382	36.822	6.738	0.000	420.213
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**224.923**	**37.160**	**34.637**	**15.562**	**0.000**	**15.562**	**16.989**	**47.382**	**36.822**	**6.738**	**0.000**	**420.213**
(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 program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SSN 688 tech insertion AN/BYG-1 shipsets.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	**Modification Type:** UPGRADE	**Related RDT&E PEs:** 0604562N

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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic	43 / 121.909	6 / 19.211	5 / 16.329	- / -	- / -	- / -	5 / 16.989	9 / 31.192	2 / 7.070	- / -	- / -	70 / 212.700
Subtotal: Recurring	*- / 121.909*	*- / 19.211*	*- / 16.329*	*- / -*	*- / -*	*- / -*	*- / 16.989*	*- / 31.192*	*- / 7.070*	*- / -*	*- / 0.000*	*- / 212.700*
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	*43 / 121.909*	*6 / 19.211*	*5 / 16.329*	*- / -*	*- / -*	*- / -*	*5 / 16.989*	*9 / 31.192*	*2 / 7.070*	*- / -*	*- / -*	*70 / 212.700*
Subtotal: Procurement, All Modification Items	*- / 121.909*	*- / 19.211*	*- / 16.329*	*- / -*	*- / -*	*- / -*	*- / 16.989*	*- / 31.192*	*- / 7.070*	*- / -*	*- / 0.000*	*- / 212.700*
Installation												
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	- / 103.014	- / 17.949	- / 18.308	- / 15.562	- / 0.000	- / 15.562	- / 0.000	- / 16.190	- / 29.752	- / 6.738	- / 0.000	- / 207.513
Subtotal: Installation	*- / 103.014*	*- / 17.949*	*- / 18.308*	*- / 15.562*	*- / -*	*- / 15.562*	*- / -*	*- / 16.190*	*- / 29.752*	*- / 6.738*	*- / 0.000*	*- / 207.513*
Total												
Total Cost (Procurement + Support + Installation)	**224.923**	**37.160**	**34.637**	**15.562**	**0.000**	**15.562**	**16.989**	**47.382**	**36.822**	**6.738**	**0.000**	**420.213**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS

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

Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS

Manufacturer Information

Manufacturer Name: Various | Manufacturer Location: Various

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 2022	Mar 2023	Mar 2024	
Delivery Dates	Mar 2020	Mar 2021		Mar 2023	Mar 2024	Mar 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	37 / 103.014	6 / 17.949	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	43 / 120.963
FY 2019	- / -	- / -	6 / 18.308	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 18.308
FY 2020	- / -	- / -	- / -	5 / 15.562	0 / 0.000	5 / 15.562	- / -	- / -	- / -	- / -	0 / 0.000	5 / 15.562
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 16.190	- / -	- / -	0 / 0.000	5 / 16.190
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 29.752	- / -	0 / 0.000	9 / 29.752
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 6.738	0 / 0.000	2 / 6.738
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	37 / 103.014	6 / 17.949	6 / 18.308	5 / 15.562	0 / 0.000	5 / 15.562	- / -	5 / 16.190	9 / 29.752	2 / 6.738	0 / 0.000	70 / 207.513

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	37	-	3	3	-	-	3	3	-	-	3	2	-	-	-	-	-	-	3	2	-	-	5	4	-	-	2	-	-	-	70
Out	37	-	-	3	3	-	-	3	3	-	-	3	2	-	-	-	-	-	-	3	2	-	-	5	4	-	-	2	-	-	70

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS
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)*	106.269	9.165	7.457	17.119	0.000	17.119	11.648	1.984	40.357	59.717	12.632	266.348
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	106.269	9.165	7.457	17.119	0.000	17.119	11.648	1.984	40.357	59.717	12.632	266.348
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**106.269**	**9.165**	**7.457**	**17.119**	**0.000**	**17.119**	**11.648**	**1.984**	**40.357**	**59.717**	**12.632**	**266.348**
(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 program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of VA Class AN/BYG-1 tech insertion shipsets.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS	**Modification Type:** UPGRADE	**Related RDT&E PEs:** 0604562N

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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic [4]	13 / 91.946	- / -	1 / 7.457	2 / 15.212	- / -	2 / 15.212	1 / 7.758	- / -	5 / 40.357	6 / 49.397	- / -	28 / 212.127
Subtotal: Recurring	*- / 91.946*	*- / -*	*- / 7.457*	*- / 15.212*	*- / -*	*- / 15.212*	*- / 7.758*	*- / -*	*- / 40.357*	*- / 49.397*	*- / 0.000*	*- / 212.127*
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS	*13 / 91.946*	*- / -*	*1 / 7.457*	*2 / 15.212*	*- / -*	*2 / 15.212*	*1 / 7.758*	*- / -*	*5 / 40.357*	*6 / 49.397*	*- / -*	*28 / 212.127*
Subtotal: Procurement, All Modification Items	*- / 91.946*	*- / -*	*- / 7.457*	*- / 15.212*	*- / -*	*- / 15.212*	*- / 7.758*	*- / -*	*- / 40.357*	*- / 49.397*	*- / 0.000*	*- / 212.127*
Installation												
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS	- / 14.323	- / 9.165	- / 0.000	- / 1.907	- / 0.000	- / 1.907	- / 3.890	- / 1.984	- / 0.000	- / 10.320	- / 12.632	- / 54.221
Subtotal: Installation	*- / 14.323*	*- / 9.165*	*- / -*	*- / 1.907*	*- / -*	*- / 1.907*	*- / 3.890*	*- / 1.984*	*- / -*	*- / 10.320*	*- / 12.632*	*- / 54.221*
Total												
Total Cost (Procurement + Support + Installation)	**106.269**	**9.165**	**7.457**	**17.119**	**0.000**	**17.119**	**11.648**	**1.984**	**40.357**	**59.717**	**12.632**	**266.348**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS

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

Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS

Manufacturer Information

Manufacturer Name: Various | Manufacturer Location: Various

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 2024	Mar 2025
Delivery Dates		Mar 2021	Mar 2022	Mar 2023		Mar 2025	Mar 2026

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	8 / 14.323	5 / 9.165	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 23.488
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	1 / 1.907	0 / 0.000	1 / 1.907	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.907
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.890	- / -	- / -	- / -	0 / 0.000	2 / 3.890
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.984	- / -	- / -	0 / 0.000	1 / 1.984
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 10.320	0 / 0.000	5 / 10.320
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 12.632	6 / 12.632
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 14.323	5 / 9.165	- / -	1 / 1.907	0 / 0.000	1 / 1.907	2 / 3.890	1 / 1.984	- / -	5 / 10.320	6 / 12.632	28 / 54.221

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	-	-	-	-	-	-	-	3	2	-	6	28
Out	8	-	-	3	2	-	-	-	-	-	-	1	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	3	2	6	28

Footnotes:

(4) FY19 reprogramming action added funds to complete installation of two Virginia Class (VA) SWFTS shipsets procured in FY18 by congressional direction.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/ CWL

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	69.617	0.000	69.617	53.781	9.321	24.626	44.142	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	69.617	0.000	69.617	53.781	9.321	24.626	44.142	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**69.617**	**0.000**	**69.617**	**53.781**	**9.321**	**24.626**	**44.142**	**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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software and Common Weapon Launcher (CWL). Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of VA Class Common Weapons Launcher AN/BYG-1 tech insertion shipsets. The Common Weapons Launcher provides a new modern COTS based Weapons Launcher for VA CLASS BLOCK III and beyond that is upgraded during each TI to support new payload capability and address obsolescence.

The cost increase is commensurate with the modernization of the Common Weapons Launcher to the VA shipset hulls slated for overall SWFTS modernization.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/ CWL

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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL												
B Kits												
Recurring												
1.1.1) EQUIPMENT - NonOrganic	- / -	- / -	- / -	6 / 69.617	- / -	6 / 69.617	3 / 35.505	- / -	2 / 24.626	3 / 37.678	Continuing	Continuing
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / 69.617*	*- / -*	*- / 69.617*	*- / 35.505*	*- / -*	*- / 24.626*	*- / 37.678*	*Continuing*	*Continuing*
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL	*- / -*	*- / -*	*- / -*	*6 / 69.617*	*- / -*	*6 / 69.617*	*3 / 35.505*	*- / -*	*2 / 24.626*	*3 / 37.678*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / 69.617*	*- / -*	*- / 69.617*	*- / 35.505*	*- / -*	*- / 24.626*	*- / 37.678*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 18.276	- / 9.321	- / 0.000	- / 6.464	- / 9.696	- / 43.757
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 18.276*	*- / 9.321*	*- / -*	*- / 6.464*	*- / 9.696*	*- / 43.757*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**69.617**	**0.000**	**69.617**	**53.781**	**9.321**	**24.626**	**44.142**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5420 / SSN Combat Control Systems	**Modification Number / Title:** 8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/ CWL

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

Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL

Manufacturer Information

Manufacturer Name: Various | Manufacturer Location: Various

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 2021	Mar 2022		Mar 2024	Mar 2025
Delivery Dates			Mar 2022	Mar 2023		Mar 2025	Mar 2026

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	- / -	- / -	- / -	- / -	- / -	- / -	6 / 18.276	- / -	- / -	- / -	0 / 0.000	6 / 18.276
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 9.321	- / -	- / -	0 / 0.000	3 / 9.321
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 6.464	0 / 0.000	2 / 6.464
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 9.696	3 / 9.696
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	6 / 18.276	3 / 9.321	- / -	2 / 6.464	3 / 9.696	14 / 43.757

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	-	-	2	1	-	-	-	-	-	-	1	1	-	3	14
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	2	1	-	-	-	-	-	-	1	1	3	14

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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)*	97.388	21.309	18.181	26.584	0.000	26.584	24.888	27.180	28.333	25.556	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	97.388	21.309	18.181	26.584	0.000	26.584	24.888	27.180	28.333	25.556	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**97.388**	**21.309**	**18.181**	**26.584**	**0.000**	**26.584**	**24.888**	**27.180**	**28.333**	**25.556**	**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:

This Budget Line Item (BLI) consists of three separate and distinct programs, the Submarine Weapons Launching and Handling Support Equipment program, the Surface ASW Support Equipment program, and the ASW Range Support Equipment program.

SUBMARINE WEAPONS LAUNCHING AND HANDLING SUPPORT EQUIPMENT (Cost Codes VC000/VC830/VC5IN): Funding for modifications and improvements to SSN 688, SSBN 726 and SSN 21 classes Attack and Ballistic Missile Submarine weapons launching, stowage and shipping systems, torpedo tube system components and torpedo tube test equipment. These requirements arise as a result of the introduction of new or modified weapons, devices, and sensors and their subsequent evaluation test and operational use. Also procured are reliability, maintainability, functional and safety modifications and tactical improvements resulting from operational use experience. This funding also provides management services required for installations.

SURFACE ASW SUPPORT EQUIPMENT (Cost Codes VC008/VC009/VC010/VC900/VC6IN): Funds the procurement and fielding of safety modifications through the Ordnance Alteration (ORDALT) process to Anti-Submarine Warfare (ASW) Fire Control, Surface Vessel Torpedo Tube (SVTT), and related ASW Fire Control/SVTT support and test equipment to maintain the current performance envelope. Modification requirements arise based on Reliability, Maintainability and Availability (RM&A) metrics and as a result of evaluation, testing, and Fleet use of existing, new, or modified ASW weapons and/or related systems and subsystems. Included in this line item are all related procurements for training and simulation equipment required for the continued operation of this equipment. ORDALT procurements are highly variable and dependent on shipboard configurations and equipment age.

Additionally, starting in FY 2021, the Surface ASW Support Equipment program (Cost Code VC010 'AN/UQN-10 Sonar Sounding Set Fathometer' P-3a Exhibit) will be responsible for the fielding of the next generation AN/UQN-10 Sonar Sounding Set Fathometer as a Commercial-Off-The-Shelf (COTS) retrofit/replacement of legacy AN/UQN-4/4A systems on Cruiser (CG47 Class), Destroyer (DDG51 Class), Aircraft Carrier (CVN Class), and Amphibious (LHA, LHD, LPD, LSD) platforms. Retrofit of legacy AN/UQN-4/4A systems is required to increase Reliability, Maintainability & Availability (RM&A) metrics, increase overall Sonar Sounding Set Fathometer system Operational Availability (Ao), eliminate obsolescence issues and reduce supportability costs. AN/UQN-10 Sonar Sounding Set Fathometer replacement/retrofit efforts include the establishment of Integrated Logistics Support (ILS) elements and engineering test procedures, qualification and acceptance testing, procurement, and installation of systems via Alteration Installation Team (AIT). The AN/UYQ-10 provides a means of measuring the depth of water below the face of a hull mounted transducer. The AN/UQN-10 measures and visually indicates or permanently records water depths ranging from 4 feet to 6,000 fathoms. Depth information is displayed on chart recorder or digital display. The AN/UQN-10 is a drop-in replacement of the legacy AN/UQN 4/4A system, uses the same interfaces and TR-355 transducers as the legacy AN/UQN-4/4A, and includes internal logging of depth data, a new touch screen control, new digital remote depth indicators, and a new EchoSim signal simulator.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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		

SURFACE ASW SUPPORT EQUIPMENT FY 2020 TO FY 2021 BUDGET REQUEST INCREASE:
- FY 2020 ($3.808M) to FY 2021 ($7.263M) increase (+$3.455M) reflects the addition of funding (as shown under the Cost Code VC010 'AN/UQN-10 Sonar Sounding Set Fathometer' P-3a Exhibit), starting in FY 2021, for the fielding of the next generation AN/UQN-10 Sonar Sounding Set Fathometer as a Commercial-Off-The-Shelf (COTS) retrofit/replacement of legacy AN/UQN-4/4A systems on Cruiser (CG47 Class), Destroyer (DDG51 Class), Aircraft Carrier (CVN Class), and Amphibious (LHA, LHD, LPD, LSD) platforms.

ASW RANGE SUPPORT EQUIPMENT (Cost Codes VC001/VC002/VC003/VC004/VC005/VC007/VC831/VC832/VC851/VC970): ASW range support equipment includes self-propelled surface targets, towed surface targets, and associated target augmentation to mimic threats and/or provide feedback. Self-propelled surface targets include the High Speed Maneuverable Surface Target (HSMST), Fast Attack Craft Target (FACT), and Ship Deployable Surface Target (SDST). Towed surface targets include the Low Cost Modular Target (LCMT) and Polyethylene Tow Target (PETT). Funding is also for the procurement of underwater tracking and shore equipment, Test and Evaluation (T&E), acoustic trial range equipment, and weapon system and test equipment. Equipment procured includes instrumentation for U.S. Fleet Operational Readiness Accuracy Check Sites (FORACS) Program, equipment required to conduct fleet exercises at fixed and portable ranges for the Underwater Tracking Range Equipment (UTRE)/Pinger Program, and equipment for the Surface Ship Radiated Noise Measurement (SSRNM) Program. Training and T&E ranges include; Southern California Offshore Range (SCORE), Barking Sands Tactical Underwater Range/Barking Sands Underwater Range Extension (BARSTUR/BSURE), Atlantic Underwater Test and Evaluation Center (AUTEC), Pacific Northwest Range Complex (Dabob/Nanoose ranges operated by Naval Undersea Warfare Center Division Keyport, Washington). UTRE ranges include Portable Offshore Training Range (POTR) and Portable Undersea Training Range (PUTR). FORACS ranges include; AUTEC, San Clementi Island, California, and deployed portable testing.

ASW RANGE SUPPORT EQUIPMENT FY 2020 TO FY 2021 BUDGET REQUEST INCREASE:
- FY 2020 ($11.978M) to FY 2021 ($19.321M) increase (+$7.343M) is primarily driven by three factors. Increase is required to provide a sufficient inventory of 1) High Speed Maneuverable Surface Target (HSMST) (Cost Code VC005) (+$6.407M) and 2) Fast Attack Craft Target (FACT) (Cost Code VC007) ($~0.724M) to meet projected weapon systems Test and Evaluation and Fleet Training exercises in FY 2021 and following years And, 3) addition of funding ($+0.300M) beginning in FY 2021 to the U.S. Fleet Operational Readiness Accuracy Check Sites (FORACS) program for FORACS targets, equipment, and system upgrades to meet OPNAVINST 4700.8K Sensor Accuracy Tests (SATs). Additional expenses for shipping and disposal of the HSMSTs will also be incurred due to transportation code changes which will no longer allow the use of the Transportation Account Code (TAC) billing process to move HSMSTs beginning in FY20.

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

[P40A / VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT]: VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT
The Submarine Torpedo Tube Support category funds in-service support and alteration procurements for all submarine Torpedo Tubes (TT), Torpedo Ejection Pumps (TEP), Internal Countermeasure Launchers (ICL), and Weapons Stowage and Handling Systems (WSHS). Development efforts under this item number include Engineering Change Proposals (ECP), ORDALTs, Type Zero (TZ) kits and Test Equipment and alteration material procurement to correct significant deficiencies in equipment affecting personnel safety, ship safety and system performance.

[P40A / VC830 - PRODUCTION ENGINEERING]: VC830 - PRODUCTION ENGINEERING
Production engineering includes resolving Liaison Action Requests (LARs) configure/test assembly in lab prior to ship installation and in-shop engineering support of vendor testing.

[P40A / VC5IN O/A INSTALLATION]: VC5IN O/A 18000 INSTALL
Installing agents will be various Naval Shipyards and contractors. Contracted installations require funding for management of installations during the availabilities. All installations will be on SSBN and SSN688/21 Class Submarines.

[P40A - 2 / SURFACE ASW SUPPORT EQUIPMENT]: Cost Codes VC008/VC009/VC010/VC900/VC6IN:

[P40A - 2 / VC008 - ASWCS FIRE CONTROL ORDALTS]: VC008 Cost Elements/Descriptions as follows:

ASWCS - UCFS/FIRE CONTROL ORDALTs Item Number 1.1: Provides funding for ORDALT kits for the ASW Underwater Control Functional Segment (UCFS), ASW Control System (ASWCS) MK116 Mod 7, Torpedo Setting Panel (MK331), and the Torpedo Pre-Setter Test Set (MK432). ORDALT procurements include a MK432 Mod 6 test set which provides for the addition of wide angle display, cable terminations

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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		

and tech refresh of obsolete motherboard parts. Also provides material support at multiple land-based laboratories as well as material support for upgrades and calibrations. Procurements will ensure laboratories are at Fleet baseline configurations.

ASWCS - PRODUCTION ENGINEERING SUPPORT Item Number 1.2: Provides the necessary production engineering support funds to cover the associated Integrated Logistics Support (ILS) elements, Engineering Change Proposal (ECP) reviews, Engineering Changes (EC), Ship Change Documents (SCDs), and engineering audits for ASW Fire Control. Reviews and approves internal and external system interfaces (hardware and integration related) and identify interface issues.

ASWCS - ACCEPTANCE TEST & EVALUATION Item Number 1.3: Provides the in-house acceptance test and evaluation funding associated with the safety and quality assurance testing of all ASW Fire Control, Alteration Equivalent to Repairs (AERs), ECPs, ECs, and SCDs.

[P40A - 2 / VC009 - TORPEDO TUBE ORDALTS]: VC009 Cost Elements/Descriptions as follows:

SVTT - MK32 ORDALTS Item Number 2.1: The SVTT MK32 is an over-the-side torpedo defense surface ship launched system that conducts close-in ASW operations. This line provides funding for SVTT MK32 launchers, Torpedo Loading Trays (TLTs), and ancillary equipment for testing, training, and maintainability on select surface ship combatants. ORDALT procurements include: Emergency Fire Circuit and Mount to Magazine Door Interoperability Circuit Improvements (SVTT MK32 Mod 19 only - ORDALT 76463); Overheat Sensor Test Set (SVTT MK32 Mod 15 Only - ORDALT 412-01-019); Torpedo MK54 SVTT Upgrades (SVTT MK32 Mods 14 Only - ORDALT 76008); Breech Mechanism Control Valve Redesign (SVTT MK32 All Mods - ORDALT TBD); Over-Heat Sensor Assembly Modification (SVTT MK32 Mod 15 Only - ORDALT 412-05-015); Training Gear Handcrank Support Improvements (SVTT MK32 Mods 15 Only - ORDALT TBD) and Air Charging Panel Regulator Improvements (SVTT MK32 MOD 15 Only - ORDALT TBD). Procure SVTT shoresite laboratory equipment for Launcher System Facilities (LSF). LSFs are used to simulate shipboard conditions for over-the-side torpedo launchers, as well as for the creation of the required ORDALTs.

SVTT - PRODUCTION ENGINEERING Item Number 2.2: Provides the necessary production engineering support funds to cover the associated Integrated Logistics Support (ILS) elements, Engineering Change Proposal (ECP) reviews, Engineering Changes (EC), SCDs, and engineering audits for SVTT ORDALTs.

SVTT - ACCEPTANCE TEST & EVALUATION Item Number 2.3: Provides the in-house acceptance test and evaluation funding required for the safety and quality assurance testing of all SVTT ORDALTs, Alteration Equivalent to Repairs (AERs), ECPs, ECs, and SCDs.

[P40A - 2 / VC900 - CONSULTING SERVICES]: VC900 Cost Element/Description as Follows:

Item 3.1: Provides the necessary funding for consulting services required to support scheduling of ASW Fire Control and SVTT ORDALT production, test, and installation efforts in conjunction with operation, safety, and environmental requirements.

[P40A - 2 / VC6IN - INSTALLATION OF EQUIPMENT]: VC6IN Cost Element/Description as follows:

Item Numbers 4.1 & 4.2: Funds the installation of all ASW UCFS/Fire Control ORDALTs/SCDs (under Cost Code VC008) and SVTT ORDALTs/SCDs (under Cost Code VC009). Alteration Installation Team (AIT) pier-side installations are variable and contingent on Type Commander (TYCOM), Ships' Scheduling Conference (SSC), and ships' availability.

[P40A - 3 / ASW RANGE SUPPORT EQUIPMENT]: ANTI-SUBMARINE WARFARE (ASW) RANGE SUPPORT EQUIPMENT:

Funding for self-propelled surface targets, towed surface targets, and associated target augmentation to mimic threats and/or provide feedback. Self-propelled surface targets include the High Speed Maneuverable Surface Target (HSMST), Fast Attack Craft Target (FACT), and Ship Deployable Surface Target (SDST). Towed surface targets include the Low Cost Modular Target (LCMT) and Polyethylene Tow Target (PETT). (Targets)

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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		

Funding also provides Surface Ship Radiated Noise Measurement (SSRNM) & US Fleet Operational Readiness Accuracy Check Sites (FORACS) test and evaluation capability for surface ships and submarines; Underwater Tracking Range Equipment (UTRE)/Pinger Program provides tracking equipment for systems, platforms, torpedoes and targets on all Navy Underwater Tracking Ranges, including portable tracking systems supporting test and training events. (S05)

[P40A - 3 / VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Accuracy Check Sites (FORACS) - N96]: Funding provides for the procurement of range communication systems, ship auto-tracking system, Surface Ship Acoustic Range Equipment, and upgraded ship position tracking system for the Surface Ship Radiated Noise Measurement (SSRNM) and US Fleet Operational Readiness Accuracy Check Sites (FORACS) programs. Funding also provides for improvements, modernizations, and upgrades to systems and equipment. (S05)

[P40A - 3 / VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N94]: Funding provides for the Underwater Tracking Range Equipment (UTRE)/Pinger program for the procurement of underwater tracking equipment for fixed and portable tracking systems, both CONUS and OCONUS, shop special Pinger purpose test equipment, and the associated ancillary hardware required to track ships and submarines during Fleet training exercises. Funding provides tracking equipment for systems, platforms, torpedoes and targets on all Navy Underwater Tracking Ranges, including portable tracking systems supporting test and training events for Forward Deployed Naval Forces (FDNF). Funding also provides for improvements, modernizations, and upgrades to systems and equipment. (S05)

[P40A - 3 / VC003 - TOWED TARGETS]: The Fleet requires low cost expendable towed targets for weapon system T&E and Fleet training. The Low Cost Modular Target (LCMT) and the Polyethylene Tow Target (PETT) are the primary towed targets used to meet these requirements.

[P40A - 3 / VC004 - INSTRUMENTATION]: Seaborne target augmentation systems include transponders (i.e. transmitters/receivers), radar reflectors, Radio Frequency (RF) emitters and Ground Support Equipment (GSE). Various electronic components provide the interface for the target control systems with the control stations/facilities for drone operations. RF emitters and radar reflectors enhance target threat replication and provide the required stimulus for anti-surface/radar weapons systems.

[P40A - 3 / VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)]: Provides the user with a medium to high speed remote controlled surface target with a high degree of maneuverability. It has a form fitted collar surrounding the deck area of the aluminum hull. This target can exceed 45 knots in a calm sea and approaches 40 knots in a sea state 3.

[P40A - 3 / VC006 - SDST (Ship Deployable Surface Target)]: SDST (Ship Deployable Surface Target) is used to support Fleet training and T&E exercises. This target supports training requirements of deploying ships and aircraft and surface gunnery requirements.

[P40A - 3 / VC007 - FACT (Fast Attack Craft Target)]: FACT (Fast Attack Craft Target) is required to meet T&E requirements for weapon systems tests and Fleet training. The exercises require a target to represent missile capable patrol craft operating at speeds of 50 knots in sea state 2 conditions.

[P40A - 3 / VC831/2 - PRODUCTION ENGINEERING]: Funding provides for Production Engineering performed by a field activity or contractor during the production phase of these projects. (S05) & (Ships)

[P40A - 3 / VC851 - PRODUCT IMPROVEMENT]: Funding provides for Product Improvement performed by a field activity or contractor during the production phase of these projects. (S05)

[P40A - 3 / VC970 - INTEGRATED LOGISTICS SUPPORT]: Funding provides for logistics spares and repair parts.

[P3A / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER]: Starting in FY 2021, the Surface ASW Support Equipment program (Cost Code VC010 'AN/UQN-10 Sonar Sounding Set Fathometer' P-3a Exhibit) will be responsible for the fielding of the next generation AN/UQN-10 Sonar Sounding Set Fathometer as a Commercial-Off-The-Shelf (COTS) retrofit/replacement of legacy AN/UQN-4/4A systems on Cruiser (CG47 Class), Destroyer (DDG51 Class), Aircraft Carrier (CVN Class), and Amphibious (LHA, LHD, LPD, LSD) platforms. Retrofit of legacy AN/UQN-4/4A systems is required to increase Reliability, Maintainability & Availability (RM&A) metrics, increase overall Sonar Sounding Set Fathometer system Operational Availability (Ao), eliminate obsolescence issues and reduce supportability costs. AN/UQN-10 Sonar Sounding Set Fathometer replacement/retrofit efforts include the establishment of Integrated Logistics Support (ILS) elements and engineering test procedures, qualification and acceptance testing, procurement, and installation of systems via Alteration Installation Team (AIT). The AN/UYQ-10 provides a means of measuring the depth of water below the face of a hull mounted transducer. The AN/UQN-10 measures and visually indicates or permanently records water depths ranging from 4 feet to 6,000 fathoms. Depth information is displayed on chart recorder or digital display. The AN/UQN-10 is a drop-in

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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		

replacement of the legacy AN/UQN 4/4A system, uses the same interfaces and TR-355 transducers as the legacy AN/UQN-4/4A, and includes internal logging of depth data, a new touch screen control, new digital remote depth indicators, and a new EchoSim signal simulator.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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) / ($ 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	SUB WEAPONS LAUNCHING/HANDLING SUPPORT EQUIPMENT				- / 15.046	- / 2.862	- / 2.395	- / -	- / -	- / -
P-40a	SURFACE ASW SUPPORT EQUIPMENT				- / 14.580	- / 3.718	- / 3.808	- / 3.763	- / -	- / 3.763
P-40a	ASW RANGE SUPPORT EQUIPMENT	P-5a			- / 67.762	- / 14.729	- / 11.978	- / 19.321	- / -	- / 19.321
P-3a	1 / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER (Warfighting Capability)				- / 0.000	- / 0.000	- / 0.000	- / 3.500	- / 0.000	- / 3.500
P-40	**Total Gross/Weapon System Cost**				**- / 97.388**	**- / 21.309**	**- / 18.181**	**- / 26.584**	**- / 0.000**	**- / 26.584**

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	SUB WEAPONS LAUNCHING/HANDLING SUPPORT EQUIPMENT				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	SURFACE ASW SUPPORT EQUIPMENT				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	ASW RANGE SUPPORT EQUIPMENT	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER (Warfighting Capability)				- / 2.600	- / 5.500	- / 6.400	- / 3.200	- / 0.000	- / 21.200
P-40	**Total Gross/Weapon System Cost**				**- / 24.888**	**- / 27.180**	**- / 28.333**	**- / 25.556**	**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:

SURFACE ASW SUPPORT EQUIPMENT FY 2020 TO FY 2021 BUDGET REQUEST INCREASE:

- FY 2020 ($3.808M) to FY 2021 ($7.263M) increase (+$3.455M) reflects the addition of funding (as shown under the Cost Code VC010 'AN/UQN-10 Sonar Sounding Set Fathometer' P-3a Exhibit), starting in FY 2021, for the fielding of the next generation AN/UQN-10 Sonar Sounding Set Fathometer as a Commercial-Off-The-Shelf (COTS) retrofit/replacement of legacy AN/UQN-4/4A systems on Cruiser (CG47 Class), Destroyer (DDG51 Class), Aircraft Carrier (CVN Class), and Amphibious (LHA, LHD, LPD, LSD) platforms. Retrofit of legacy AN/UQN-4/4A systems is required to increase Reliability, Maintainability & Availability (RM&A) metrics, increase overall Sonar Sounding Set Fathometer system Operational Availability (Ao), eliminate obsolescence issues and reduce supportability costs. AN/UQN-10 Sonar Sounding Set Fathometer replacement/retrofit efforts include the establishment of Integrated Logistics Support (ILS) elements and engineering test procedures, qualification and acceptance testing, procurement, and installation of systems via Alteration Installation Team (AIT).

NOTE: The total AN/UQN-10 Sonar Sounding Set Fathometer retrofit requirement is 116 ships. With respect to system procurements, 98 systems have been procured via the OPN BLI 0670 Other Navigation Equipment Cost Code GW060 program through FY 2020, leaving a balance of 18 systems that will be procured via the OPN BLI 5429 Surface ASW Support Equipment Cost Code VC010 program here. With respect to system installations, 34 systems will be installed via the OPN BLI 0670 GW060 program through FY 2020, leaving a balance of 82 systems that will be installed via the OPN BLI 5429 VC010 program (64 from assets previously bought under the OPN BLI 0670 GW060 program through FY 2020 - these 64 assets are depicted within the 'Procurement' section of the OPN BLI 5429 VC010 P-3a in the Prior Years thru FY 2020 columns with the applicable quantities and zero dollars for accounting purposes, and 18 as assets to be bought under the OPN BLI 5429 VC010 program here).

ASW RANGE SUPPORT EQUIPMENT FY 2020 TO FY 2021 BUDGET REQUEST INCREASE:

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment	**P-1 Line Item Number / Title:** 5429 / ASW Support 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		

- FY 2020 ($11.978M) to FY 2021 ($19.321M) increase (+$7.343M) is primarily driven by three factors. Increase is required to provide a sufficient inventory of 1) High Speed Maneuverable Surface Target (HSMST) (Cost Code VC005) (+$6.407M) and 2) Fast Attack Craft Target (FACT) (Cost Code VC007) ($~0.724M) to meet projected weapon systems Test and Evaluation and Fleet Training exercises in FY 2021 and following years And, 3) addition of funding ($+0.300M) beginning in FY 2021 to the U.S. Fleet Operational Readiness Accuracy Check Sites (FORACS) program for FORACS targets, equipment, and system upgrades to meet OPNAVINST 4700.8K Sensor Accuracy Tests (SATs). Additional expenses for shipping and disposal of the HSMSTs will also be incurred due to transportation code changes which will no longer allow the use of the Transportation Account Code (TAC) billing process to move HSMSTs beginning in FY20.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5429 / ASW Support Equipment	**Aggregated Items Title:** SUB WEAPONS LAUNCHING/ HANDLING SUPPORT 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 ($)	Qty (Each)	Total Cost ($ 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) VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT																				
1.1) 2J COG MATERIAL	A		-	-	0.495	-	-	0.101	-	-	0.082	-	-	-	-	-	-	-	-	-
1.2) TT/TEP/ICL/ WSHS	A		-	-	4.132	-	-	1.071	-	-	1.081	-	-	-	-	-	-	-	-	-
Subtotal: 1) VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT			**-**	**-**	***4.627***	**-**	**-**	***1.172***	**-**	**-**	***1.163***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) VC000 ORDALT PROCUREMENT																				
2.1) O/A MATERIAL	A		50,000.00	22	1.100	50,000.00	3	0.150	50,000.00	1	0.050	-	-	-	-	-	-	-	-	-
Subtotal: 2) VC000 ORDALT PROCUREMENT			**-**	**-**	***1.100***	**-**	**-**	***0.150***	**-**	**-**	***0.050***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
3) VC000 - TEST EQUIPMENT																				
3.1) BORE GAGE	A		-	-	0.131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) MISC. TEST EQUIPMENT	A		-	-	0.315	-	-	0.132	-	-	0.126	-	-	-	-	-	-	-	-	-
3.3) TEST FACILITY EQUIPMENT	A		-	-	0.388	-	-	0.125	-	-	0.124	-	-	-	-	-	-	-	-	-
Subtotal: 3) VC000 - TEST EQUIPMENT			**-**	**-**	***0.834***	**-**	**-**	***0.257***	**-**	**-**	***0.250***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4) VC830 - PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING	A		-	-	0.860	-	-	0.150	-	-	0.190	-	-	-	-	-	-	-	-	-
Subtotal: 4) VC830 - PRODUCTION ENGINEERING			**-**	**-**	***0.860***	**-**	**-**	***0.150***	**-**	**-**	***0.190***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) VC5IN - ORDALT INSTALLATION																				
5.1) VC5IN O/A INSTALLATION	A		-	-	7.625	-	-	1.133	-	-	0.742	-	-	-	-	-	-	-	-	-
Subtotal: 5) VC5IN - ORDALT INSTALLATION			**-**	**-**	***7.625***	**-**	**-**	***1.133***	**-**	**-**	***0.742***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**15.046**	**-**	**-**	**2.862**	**-**	**-**	**2.395**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

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

Footnotes:

(1) This line item procures modifications and improvements to Attack and Ballistic Missile Submarine fire control interface systems, torpedo tube system components and torpedo tube test equipment. These requirements arise as a result of the introduction of new or modified weapons and sensors and their subsequent evaluation test and operational use. Also procured are reliability, maintainability, functional and safety modifications and tactical improvements resulting from operational use experience.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5429 / ASW Support Equipment	**Aggregated Items Title:** SURFACE ASW 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) VC008 - ASWCS FIRE CONTROL ORDALTS																				
1.1) ASWCS - UCFS/ FIRE CONTROL ORDALTS			-	-	6.648	-	-	1.701	-	-	1.743	-	-	1.712	-	-	-	-	-	1.712
1.2) ASWCS - PRODUCTION ENGINEERING SUPPORT			-	-	0.350	-	-	0.093	-	-	0.095	-	-	0.097	-	-	-	-	-	0.097
1.3) ASWCS - ACCEPTANCE TEST & EVALUATION			-	-	0.201	-	-	0.052	-	-	0.053	-	-	0.054	-	-	-	-	-	0.054
Subtotal: 1) VC008 - ASWCS FIRE CONTROL ORDALTS			**-**	**-**	***7.199***	**-**	**-**	***1.846***	**-**	**-**	***1.891***	**-**	**-**	***1.863***	**-**	**-**	**-**	**-**	**-**	***1.863***
2) VC009 - TORPEDO TUBE ORDALTS																				
2.1) SVTT - MK32 ORDALTS			-	-	5.590	-	-	1.427	-	-	1.463	-	-	1.437	-	-	-	-	-	1.437
2.2) SVTT - PRODUCTION ENGINEERING SUPPORT			-	-	0.346	-	-	0.093	-	-	0.095	-	-	0.097	-	-	-	-	-	0.097
2.3) SVTT - ACCEPTANCE TEST & EVALUATION			-	-	0.201	-	-	0.052	-	-	0.053	-	-	0.054	-	-	-	-	-	0.054
Subtotal: 2) VC009 - TORPEDO TUBE ORDALTS			**-**	**-**	***6.137***	**-**	**-**	***1.572***	**-**	**-**	***1.611***	**-**	**-**	***1.588***	**-**	**-**	**-**	**-**	**-**	***1.588***
3) VC900 - CONSULTING SERVICES																				
3.1) CONSULTING SERVICES			-	-	0.399	-	-	0.090	-	-	0.092	-	-	0.094	-	-	-	-	-	0.094
Subtotal: 3) VC900 - CONSULTING SERVICES			**-**	**-**	***0.399***	**-**	**-**	***0.090***	**-**	**-**	***0.092***	**-**	**-**	***0.094***	**-**	**-**	**-**	**-**	**-**	***0.094***
4) VC6IN - INSTALLATION OF EQUIPMENT																				
4.1) ASWCS - UCFS/ FIRE CONTROL ORDALTS			-	-	0.433	-	-	0.106	-	-	0.108	-	-	0.110	-	-	-	-	-	0.110
4.2) SVTT - TORPEDO TUBE ORDALTS			-	-	0.412	-	-	0.104	-	-	0.106	-	-	0.108	-	-	-	-	-	0.108
Subtotal: 4) VC6IN - INSTALLATION OF EQUIPMENT			**-**	**-**	***0.845***	**-**	**-**	***0.210***	**-**	**-**	***0.214***	**-**	**-**	***0.218***	**-**	**-**	**-**	**-**	**-**	***0.218***
Total			**-**	**-**	**14.580**	**-**	**-**	**3.718**	**-**	**-**	**3.808**	**-**	**-**	**3.763**	**-**	**-**	**-**	**-**	**-**	**3.763**

Note: Subtotals or Totals in this Exhibit P-40a 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 / 04 / 5	P-1 Line Item Number / Title: 5429 / ASW Support Equipment	Aggregated Items Title: ASW RANGE 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) VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Acc																				
1.1) VC001 - SSRNM/ US FORACS (S05)	A		-	-	9.918	-	-	2.568	-	-	2.464	-	-	2.739	-	-	-	-	-	2.739
Subtotal: 1) VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Acc			**-**	**-**	***9.918***	**-**	**-**	***2.568***	**-**	**-**	***2.464***	**-**	**-**	***2.739***	**-**	**-**	**-**	**-**	**-**	***2.739***
2) VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N94																				
2.1) VC002 - UTRE (S05)	A		-	-	7.976	-	-	1.773	-	-	1.855	-	-	1.868	-	-	-	-	-	1.868
Subtotal: 2) VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N94			**-**	**-**	***7.976***	**-**	**-**	***1.773***	**-**	**-**	***1.855***	**-**	**-**	***1.868***	**-**	**-**	**-**	**-**	**-**	***1.868***
3) VC003 - TOWED TARGETS																				
3.1) VC003 - TOWED TARGETS (SHIPS)	A		-	-	3.741	-	-	0.833	-	-	1.217	-	-	1.111	-	-	-	-	-	1.111
Subtotal: 3) VC003 - TOWED TARGETS			**-**	**-**	***3.741***	**-**	**-**	***0.833***	**-**	**-**	***1.217***	**-**	**-**	***1.111***	**-**	**-**	**-**	**-**	**-**	***1.111***
4) VC004 - INSTRUMENTATION																				
4.1) VC004 - INSTRUMENTATION (SHIPS)	A		-	-	0.619	-	-	0.170	-	-	0.170	-	-	0.180	-	-	-	-	-	0.180
Subtotal: 4) VC004 - INSTRUMENTATION			**-**	**-**	***0.619***	**-**	**-**	***0.170***	**-**	**-**	***0.170***	**-**	**-**	***0.180***	**-**	**-**	**-**	**-**	**-**	***0.180***
5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)																				
5.1) VC005 - HSMST (SHIPS) (2)(†)	A		189,187.19	203	38.405	203,282.00	39	7.928	202,583.00	24	4.862	204,891.00	55	11.269	-	-	-	204,891.00	55	11.269
Subtotal: 5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)			**-**	**-**	***38.405***	**-**	**-**	***7.928***	**-**	**-**	***4.862***	**-**	**-**	***11.269***	**-**	**-**	**-**	**-**	**-**	***11.269***
6) VC006 - SDST (Ship Deployable Surface Target)																				
6.1) VC006 - SDST (Ship Deployable Surface Target) (SHIPS)	A		-	-	0.407	-	-	0.117	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) VC006 - SDST (Ship Deployable Surface Target)			**-**	**-**	***0.407***	**-**	**-**	***0.117***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7) VC007 - FACT (Fast Attack Craft Target)																				
7.1) VC007 - FACT (Fast Attack Craft Target) (SHIPS)	A		670,000.00	3	2.010	-	-	-	-	-	-	723,848.00	1	0.724	-	-	-	723,848.00	1	0.724
Subtotal: 7) VC007 - FACT (Fast Attack Craft Target)			**-**	**-**	***2.010***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***0.724***	**-**	**-**	**-**	**-**	**-**	***0.724***
8) VC831/2 - PRODUCTION ENGINEERING																				

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5429 / ASW Support Equipment	Aggregated Items Title: ASW RANGE 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)
8.1) VC831 - PRODUCTION ENGINEERING UTRE - N94/US FORACS - N96 (S05)	A		-	-	1.192	-	-	0.381	-	-	0.395	-	-	0.395	-	-	-	-	-	0.395
8.2) VC832 - PRODUCTION ENGINEERING (Ships)	A		-	-	1.769	-	-	0.460	-	-	0.470	-	-	0.480	-	-	-	-	-	0.480
Subtotal: 8) VC831/2 - PRODUCTION ENGINEERING			**-**	**-**	***2.961***	**-**	**-**	***0.841***	**-**	**-**	***0.865***	**-**	**-**	***0.875***	**-**	**-**	**-**	**-**	**-**	***0.875***
9) VC851 - PRODUCT IMPROVEMENT																				
9.1) VC851 - PRODUCT IMPROVEMENT UTRE - N94/US FORACS-N96 (S05)	A		-	-	1.193	-	-	0.381	-	-	0.395	-	-	0.395	-	-	-	-	-	0.395
Subtotal: 9) VC851 - PRODUCT IMPROVEMENT			**-**	**-**	***1.193***	**-**	**-**	***0.381***	**-**	**-**	***0.395***	**-**	**-**	***0.395***	**-**	**-**	**-**	**-**	**-**	***0.395***
10) VC970 - INTEGRATED LOGISTICS SUPPORT																				
10.1) VC970 - INTEGRATED LOGISTICS SUPPORT (SHIPS)	A		-	-	0.532	-	-	0.118	-	-	0.150	-	-	0.160	-	-	-	-	-	0.160
Subtotal: 10) VC970 - INTEGRATED LOGISTICS SUPPORT			**-**	**-**	***0.532***	**-**	**-**	***0.118***	**-**	**-**	***0.150***	**-**	**-**	***0.160***	**-**	**-**	**-**	**-**	**-**	***0.160***
Total			**-**	**-**	**67.762**	**-**	**-**	**14.729**	**-**	**-**	**11.978**	**-**	**-**	**19.321**	**-**	**-**	**-**	**-**	**-**	**19.321**

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:

(2) HSMSTs must be procured annually to (1) replace targets destroyed during testing/exercises, (2) replace targets which are beyond their service life and (3) provide a sufficient inventory of targets at the operating activities (Target Ranges). The Navy conducts approximately 3,000 seaborne target exercises each year. 1,500 seaborne target operations each year involve the HSMST and between 50 and 100 are destroyed annually. HSMSTs can be re-used if the target is not impacted or if the extent of the damage is minimal enough to allow the HSMST to be repaired.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5429 / ASW Support Equipment	Aggregated Items: ASW RANGE 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
5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)												
5.1) VC005 - HSMST (SHIPS) (2)		2018	Silverships / Theodore, AL	C / FFP	NAVSEA	Jan 2019	Jul 2019	40	197,576.00	Y		Nov 2018
5.1) VC005 - HSMST (SHIPS) (2)		2019	Silverships / Theodore, AL	C / FFP	NAVSEA	Jan 2019	Dec 2019	39	203,282.00	Y		Nov 2018
5.1) VC005 - HSMST (SHIPS) (2)		2020	Silverships / Theodore, AL	C / FFP	NAVSEA	Jan 2020	Apr 2020	24	202,583.00	Y		Nov 2019
5.1) VC005 - HSMST (SHIPS) (2)		2021	TBD / TBD	C / FFP	NAVSEA	Jan 2021	Jan 2021	55	204,891.00	Y		Nov 2020

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5429 / ASW Support Equipment	**Modification Number / Title:** 1 / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER
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	3.500	0.000	3.500	2.600	5.500	6.400	3.200	0.000	21.200
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	0.000	3.500	0.000	3.500	2.600	5.500	6.400	3.200	0.000	21.200
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**0.000**	**3.500**	**0.000**	**3.500**	**2.600**	**5.500**	**6.400**	**3.200**	**0.000**	**21.200**
(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 Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Starting in FY 2021, the Surface ASW Support Equipment program (Cost Code VC010 'AN/UQN-10 Sonar Sounding Set Fathometer' P-3a Exhibit) will be responsible for the fielding of the next generation AN/UQN-10 Sonar Sounding Set Fathometer as a Commercial-Off-The-Shelf (COTS) retrofit/replacement of legacy AN/UQN-4/4A systems on Cruiser (CG47 Class), Destroyer (DDG51 Class), Aircraft Carrier (CVN Class), and Amphibious (LHA, LHD, LPD, LSD) platforms. Retrofit of legacy AN/UQN-4/4A systems is required to increase Reliability, Maintainability & Availability (RM&A) metrics, increase overall Sonar Sounding Set Fathometer system Operational Availability (Ao), eliminate obsolescence issues and reduce supportability costs. AN/UQN-10 Sonar Sounding Set Fathometer replacement/retrofit efforts include the establishment of Integrated Logistics Support (ILS) elements and engineering test procedures, qualification and acceptance testing, procurement, and installation of systems via Alteration Installation Team (AIT). The AN/UYQ-10 provides a means of measuring the depth of water below the face of a hull mounted transducer. The AN/UQN-10 measures and visually indicates or permanently records water depths ranging from 4 feet to 6,000 fathoms. Depth information is displayed on chart recorder or digital display. The AN/UQN-10 is a drop-in replacement of the legacy AN/UQN 4/4A system, uses the same interfaces and TR-355 transducers as the legacy AN/UQN-4/4A, and includes internal logging of depth data, a new touch screen control, new digital remote depth indicators, and a new EchoSim signal simulator.

NOTE: The total AN/UQN-10 Sonar Sounding Set Fathometer retrofit requirement is 116 ships. With respect to system procurements, 98 systems have been procured via the OPN BLI 0670 Other Navigation Equipment Cost Code GW060 program through FY 2020, leaving a balance of 18 systems that will be procured via the OPN BLI 5429 Surface ASW Support Equipment Cost Code VC010 program here. With respect to system installations, 34 systems will be installed via the OPN BLI 0670 GW060 program through FY 2020, leaving a balance of 82 systems that will be installed via the OPN BLI 5429 VC010 program (64 from assets previously bought under the OPN BLI 0670 GW060 program through FY 2020 - these 64 assets are depicted within the 'Procurement' section of the OPN BLI 5429 VC010 P-3a in the Prior Years thru FY 2020 columns with the applicable quantities and zero dollars for accounting purposes, and 18 as assets to be bought under the OPN BLI 5429 VC010 program here).

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5429 / ASW Support Equipment	**Modification Number / Title:** 1 / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Retrofit of legacy AN/UQN-4/4A Sonar Sounding Set Fathometer systems with next generation AN/UYQ-10	**Modification Type:** Warfighting Capability	**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: VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER												
B Kits												
Recurring												
1.1.1) VC010 - AN/UQN-10 SOUNDING SET FATHOMETER - NonOrganic (3)	42 / 0.000	13 / 0.000	9 / 0.000	- / -	- / -	- / -	- / -	- / -	18 / 4.150	- / -	- / -	82 / 4.150
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.150*	*- / -*	*- / 0.000*	*- / 4.150*
Subtotal: VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER	*42 / 0.000*	*13 / 0.000*	*9 / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*18 / 4.150*	*- / -*	*- / -*	*82 / 4.150*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 4.150*	*- / -*	*- / 0.000*	*- / 4.150*
Installation												
Modification Item 1 of 1: VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER	- / 0.000	- / 0.000	- / 0.000	- / 3.500	- / 0.000	- / 3.500	- / 2.600	- / 5.500	- / 2.250	- / 3.200	- / 0.000	- / 17.050
Subtotal: Installation	*- / 0.000*	*- / -*	*- / -*	*- / 3.500*	*- / -*	*- / 3.500*	*- / 2.600*	*- / 5.500*	*- / 2.250*	*- / 3.200*	*- / 0.000*	*- / 17.050*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**0.000**	**3.500**	**0.000**	**3.500**	**2.600**	**5.500**	**6.400**	**3.200**	**0.000**	**21.200**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5429 / ASW Support Equipment	**Modification Number / Title:** 1 / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER

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

Modification Item 1 of 1: VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER

Manufacturer Information

Manufacturer Name: TBD | Manufacturer Location: TBD

Administrative Leadtime *(in Months)*: 0 | Production Leadtime *(in Months)*: 7

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	
Delivery Dates			Sep 2021	Sep 2022	Sep 2023	Sep 2024	

Installation Information

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: VC010 - AN/UQN-10 SOUNDING SET FATHOMETER

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	- / -	- / -	- / -	17 / 3.500	0 / 0.000	17 / 3.500	12 / 2.600	13 / 2.860	- / -	- / -	0 / 0.000	42 / 8.960
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 2.640	1 / 0.225	- / -	0 / 0.000	13 / 2.865
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 2.025	- / -	0 / 0.000	9 / 2.025
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 3.200	0 / 0.000	18 / 3.200
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	17 / 3.500	0 / 0.000	17 / 3.500	12 / 2.600	25 / 5.500	10 / 2.250	18 / 3.200	0 / 0.000	82 / 17.050

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	-	-	-	-	-	-	-	-	-	2	6	6	3	2	3	4	3	5	5	10	5	3	3	2	2	3	4	6	5	-	82
Out	-	-	-	-	-	-	-	-	-	2	6	6	3	2	3	4	3	5	5	10	5	3	3	2	2	3	4	6	5	-	82

Footnotes:

(3) NOTE: The total AN/UQN-10 Sonar Sounding Set Fathometer retrofit requirement is 116 ships. With respect to system procurements, 98 systems have been procured via the OPN BLI 0670 Other Navigation Equipment Cost Code GW060 program through FY 2020, leaving a balance of 18 systems that will be procured via the OPN BLI 5429 Surface ASW Support Equipment Cost Code VC010 program here. With respect to system installations, 34 systems will be installed via the OPN BLI 0670 GW060 program through FY 2020, leaving a balance of 82 systems that will be installed via the OPN BLI 5429 VC010 program

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	**P-1 Line Item Number / Title:** 5429 / ASW Support Equipment	**Modification Number / Title:** 1 / VC010 - AN/UQN-10 SONAR SOUNDING SET FATHOMETER
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(64 from assets previously bought under the OPN BLI 0670 GW060 program through FY 2020 - these 64 assets are depicted within the 'Procurement' section of the OPN BLI 5429 VC010 P-3a in the Prior Years thru FY 2020 columns with the applicable quantities and zero dollars for accounting purposes, and 18 as assets to be bought under the OPN BLI 5429 VC010 program here).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment	**P-1 Line Item Number / Title:** 5509 / EOD Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603654N, 0604654N, 0604653N

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)*	780.854	41.838	24.251	7.470	2.124	9.594	7.681	27.741	27.682	11.427	-	931.068
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	780.854	41.838	24.251	7.470	2.124	9.594	7.681	27.741	27.682	11.427	-	931.068
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**780.854**	**41.838**	**24.251**	**7.470**	**2.124**	**9.594**	**7.681**	**27.741**	**27.682**	**11.427**	**-**	**931.068**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.002	2.063	0.290	-	0.290	0.826	0.888	0.468	-	-	4.537
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Explosive Ordnance Disposal (EOD) Equipment procures Navy EOD required tools and equipment developed to support a lethal, agile, and resilient force. In alignment with efforts to modernize in accordance with the National Defense Strategy, EOD Technicians require specialized tools to enable dynamic maneuver of Ships, Submarines, and Aircraft against near peer adversaries through the render safe and mitigation of explosive hazards on land and underwater. EOD Equipment supports 64 EOD Platoons both OCONUS and CONUS operations that allow the ability to detect, access, diagnose, render safe, exploit, and dispose of threats to National Security. Threat analysis requires increased standoff distances from increasingly lethal, dynamic and advanced weapons system threats fielded by near peer adversaries. FY21 OPN supports Procurement of Initial Outfitting 12 of 64 Platoons.

Counter Radio-Controlled Improvised Explosive Device (IED) Electronic Warfare (CREW) systems that disrupt enemy command and control radio frequency (RF) communications associated with IEDs is procured by this program. Additionally, in support of JUONS CC-0558 Counter Unmanned Aerial System (C-UAS) Capabilities, this program also supports the Navy effort to field CREW dismounted systems with a man-portable C-UAS capability. The C-UAS capability has since been expanded to include all JCREW variants and includes upgrades to system hardware.

The Navy is responsible for the management and execution of the Joint Service Explosive Ordnance Disposal (EOD) unified procurement system as assigned by DOD Directive 5160.62.

VN075:
EOD Robotics: Provides USN EOD Robotics outfitting for performing dismounted operations in remote locations or forces directly supporting maneuver forces to provide access to battlespace and ensure freedom of navigation. Procurement of systems support modular open architecture approaches for reduction of equipment footprint and Initial Outfitting 12 of 64 Platoons.

VN077:
EXPEDITIONARY EXPLOIATION UNIT (EXU-1): Provides for outfitting of EXU-1 Detachment approved Table of Allowance to address operational requirements for ordnance and IED exploitation in support of global tasking. Enables rapid attribution intelligence against asymmetric and near peer threats to shape geo-political responses.

NAVY EOD EQUIPMENT: Procurement provides the recapitalization and modernization of EOD equipment in support of approved Buy Plan for EOD Radiographic Digital Imaging Systems, Disruptors, Dearmers, and sub-surface ordnance and IED Locators.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment	**P-1 Line Item Number / Title:** 5509 / EOD Equipment	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603654N, 0604654N, 0604653N
Line Item MDAP/MAIS Code: N/A		

VN830 PRODUCTION ENGINEERING: Provides support for EOD production systems to include radiographic digital imaging systems, disruptors, dearmers, component kill shape charges, and sub-surface ordnance and IED Locators. Supports technical data packages production and required engineering changes prior to Initial Operational Capability.

VN850 PRODUCT IMPROVEMENT: Engineering to improve EOD Equipment in production for design and technical advances during manufacturing and production for Radiographic Digital Imaging System and sub-surface ordnance and IED Locators.

VN860 ACCEPTANCE TEST & EVALUATION: Acceptance, test, inspect on production EOD tools Radiographic Digital Imaging System being procures prior to taking delivery.

VNTNG INITIAL TRAINING: Provides new equipment training, manuals, and computer based training to EOD users and training units to align to production and fielding for radiographic digital imaging systems and subsurface ordnance and IED locators.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment	**P-1 Line Item Number / Title:** 5509 / EOD Equipment	
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603654N, 0604654N, 0604653N
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 / EOD - CREW Equipment	P-5a, P-21			- / 780.854	- / 41.838	- / 24.251	- / 7.470	- / 2.124	- / 9.594
P-40	**Total Gross/Weapon System Cost**				**- / 780.854**	**- / 41.838**	**- / 24.251**	**- / 7.470**	**- / 2.124**	**- / 9.594**

*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:
FY 2021 baseline funding will procure Navy EOD Equipment, EOD Robotics, Production Engineering, Acceptance Test, Product Improvement of the EOD equipment, EOD training, and Technical Training material used for New Equipment Training of Radiographic Digital Imaging System, Sub-Surface ordnance and IED Locators, newly fielded disruptors and dearmers.

FY 2021 procures Explosive Ordnance Disposal Robotics for dismounted and reconnaissance missions and EOD Equipment for Radiographic Digital Imaging Systems and Sub-Surface ordnance and IED Locators.

OCO:
FY 2021 Overseas Contingency Operations (OCO) funds support Expeditionary Exploitation Unit One (formerly TSD) combatant command requirements in Operation Freedom Sentinel Theater (OFS-T), and Operation Enduring Freedom Horn of Africa (OEF-H).

FY 2021 Overseas Contingency Operations (OCO) funds support Explosive Ordnance Disposal (EOD) teams, which require equipment to conduct diagnostics and render safe procedures for foreign conventional and unconventional threats, to include Improvised Explosive Devices. EOD Missions enable access and movement through hostile regions and contribute to Force Protection and Battlespace Awareness in combat areas of operation that supports combatant command requirements in Operation Freedom Sentinel Theater (OFS-T), and Operation Enduring Freedom Horn of Africa (OEF-H).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / EOD Equipment	Item Number / Title [DODIC]: 1 / EOD - CREW 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
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	780.854	41.838	24.251	7.470	2.124	9.594
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	780.854	41.838	24.251	7.470	2.124	9.594
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**780.854**	**41.838**	**24.251**	**7.470**	**2.124**	**9.594**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	0.002	2.063	0.290	-	0.290
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 - VN075 - EOD EQUIPMENT/SYSTEM Cost																		
Recurring Cost																		
1.1.1) EOD ROBOTICS(†)	-	-	10.355	-	-	-	126,534.00	73	9.237	126,586.00	29	3.671	-	-	-	126,586.00	29	3.671
Subtotal: Recurring Cost	-	-	*10.355*	-	-	-	-	-	*9.237*	-	-	*3.671*	-	-	-	-	-	*3.671*
Subtotal: Hardware - VN075 - EOD EQUIPMENT/ SYSTEM Cost	**-**	**-**	***10.355***	**-**	**-**	**-**	**-**	**-**	***9.237***	**-**	**-**	***3.671***	**-**	**-**	**-**	**-**	**-**	***3.671***
Hardware - VN077 - EOD OUTFITTING Cost																		
Recurring Cost																		
2.1.1) EXPEDITIONARY EXPLOITATION UNIT (EXU-1) (1)	-	-	23.491	-	-	3.462	-	-	3.550	-	-	0.000	-	-	2.124	-	-	2.124
2.1.2) MATERIAL FOR NAVSCOLEOD	-	-	3.843	-	-	0.305	-	-	0.325	-	-	-	-	-	-	-	-	-
2.1.3) EOD DECISION SUPPORT SYSTEM CONTINUOUS IMPROVEMENTS	-	-	12.418	-	-	1.268	-	-	1.060	-	-	-	-	-	-	-	-	-
2.1.4) NAVY EOD EQUIPMENT (2)	-	-	40.606	-	-	6.135	-	-	6.492	-	-	0.444	-	-	-	-	-	0.444
2.1.5) ROBOTICS EQUIPMENT (3)	-	-	-	-	-	2.500	-	-	0.100	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*80.358*	-	-	*13.670*	-	-	*11.527*	-	-	*0.444*	-	-	*2.124*	-	-	*2.568*

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / EOD Equipment	Item Number / Title [DODIC]: 1 / EOD - CREW Equipment
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)
Subtotal: Hardware - VN077 - EOD OUTFITTING Cost	**-**	**-**	***80.358***	**-**	**-**	***13.670***	**-**	**-**	***11.527***	**-**	**-**	***0.444***	**-**	**-**	***2.124***	**-**	**-**	***2.568***
Hardware - VN870 - JOINT CREW Cost																		
Non Recurring Cost																		
3.1.1) JOINT CREW(†) (4)	155,571.43	637	99.099	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.1.2) TECH INSERTION and REFRESH	-	-	1.587	-	-	0.836	-	-	0.868	-	-	0.862	-	-	-	-	-	0.862
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS)(†) (5)	488,666.67	75	36.650	498,000.00	50	24.900	-	-	-	-	-	-	-	-	-	-	-	-
3.1.4) NSW COUNTER UNMANNED AERIAL SYSTEM (CUAS) (6)	-	-	1.600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*138.936*	-	-	*25.736*	-	-	*0.868*	-	-	*0.862*	-	-	-	-	-	*0.862*
Subtotal: Hardware - VN870 - JOINT CREW Cost	**-**	**-**	***138.936***	**-**	**-**	***25.736***	**-**	**-**	***0.868***	**-**	**-**	***0.862***	**-**	**-**	**-**	**-**	**-**	***0.862***
Support - VN830 - PRODUCTION ENGINEERING Cost																		
4.1) PRODUCTION ENGINEERING (7)	-	-	12.467	-	-	1.060	-	-	1.141	-	-	1.014	-	-	-	-	-	1.014
Subtotal: Support - VN830 - PRODUCTION ENGINEERING Cost	**-**	**-**	***12.467***	**-**	**-**	***1.060***	**-**	**-**	***1.141***	**-**	**-**	***1.014***	**-**	**-**	**-**	**-**	**-**	***1.014***
Support - VN850 - PRODUCT IMPROVEMENT Cost																		
5.1) PRODUCT IMPROVEMENT (8)	-	-	8.935	-	-	0.508	-	-	0.548	-	-	0.548	-	-	-	-	-	0.548
Subtotal: Support - VN850 - PRODUCT IMPROVEMENT Cost	**-**	**-**	***8.935***	**-**	**-**	***0.508***	**-**	**-**	***0.548***	**-**	**-**	***0.548***	**-**	**-**	**-**	**-**	**-**	***0.548***
Support - VN860 - ACCEPTANCE, TEST & EVALUATION Cost																		
6.1) JOINT EOD ACCEPTANCE TEST & EVALUATION (9)	-	-	8.199	-	-	0.599	-	-	0.640	-	-	0.641	-	-	-	-	-	0.641

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / EOD Equipment	Item Number / Title [DODIC]: 1 / EOD - CREW Equipment
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)
6.2) JOINT CREW ACCEPTANCE TEST & EVALUATION	-	-	3.104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - VN860 - ACCEPTANCE, TEST & EVALUATION Cost	**-**	**-**	***11.303***	**-**	**-**	***0.599***	**-**	**-**	***0.640***	**-**	**-**	***0.641***	**-**	**-**	**-**	**-**	**-**	***0.641***
Support - VNTNG - INITIAL TRAINING Cost																		
7.1) VNTNG - INITIAL TRAINING (10)	-	-	3.541	-	-	0.265	-	-	0.290	-	-	0.290	-	-	-	-	-	0.290
Subtotal: Support - VNTNG - INITIAL TRAINING Cost	**-**	**-**	***3.541***	**-**	**-**	***0.265***	**-**	**-**	***0.290***	**-**	**-**	***0.290***	**-**	**-**	**-**	**-**	**-**	***0.290***
Support - PRIOR YEARS CUMULATIVE FUNDING Cost																		
8.1) PRIOR YEAR FUNDING	-	-	514.959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - PRIOR YEARS CUMULATIVE FUNDING Cost	**-**	**-**	***514.959***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**-**	**-**	**780.854**	**-**	**-**	**41.838**	**-**	**-**	**24.251**	**-**	**-**	**7.470**	**-**	**-**	**2.124**	**-**	**-**	**9.594**

(†) indicates the presence of a P-5a

Footnotes:

(1) EXPEDITIONARY EXPLOITATION UNIT (EXU-1): Provides for outfitting of EXU-1 Detachment approved Table of Allowance to address operational requirements for ordnance and IED exploitation in support of global tasking. Enables rapid attribution intelligence against asymmetric and near peer threats to shape geo-political responses.

(2) NAVY EOD EQUIPMENT: Procurement provides the recapitalization and modernization of EOD equipment in support of approved Buy Plan for EOD Radiographic Digital Imaging Systems, Disruptors, Dearmers, and sub-surface ordnance and IED Locators.

(3) EOD Robotics Equipment: Provides USN EOD outfitting dismounted operations systems for performing operations in remote locations or when Joint Service Explosive Ordnance Disposal (JSEOD) forces are directly supporting maneuver forces in the anticipation of an incident. Procurement of systems support modular open architecture approaches for reduction of equipment footprint.

(4) JOINT CREW Provides for the procurement, support, and other related costs of the Joint Counter Radio Controlled Improvised Explosive Device - Electronic Warfare (JCREW) program and related family of systems that provide countermeasures against the global Radio Controlled IED (RCIED) threat.

(5) JOINT CREW UNMANNED AERIAL SYSTEMS: Provides for the procurement and support of Joint CREW systems and tech insertion upgrades to systems to provide a Counter Unmanned Aerial System (CUAS) capability in support of Joint Urgent Operational Need (JUON) CC-0558 and Fleet Forces Command requirements.

(6) NSW COUNTER UNMANNED AERIAL SYSTEM: Supports the procurement of Naval Surface Warfare to provide a Counter Unmanned Aerial System (C-UAS) capability in response to a Joint Urgent Operational Need (JUON)CC-0558.

(7) VN830 PRODUCTION ENGINEERING: Provides support for EOD production systems to include radiographic digital imaging systems, disruptors, dearmers, component kill shape charges, and sub-surface ordnance and IED Locators. Supports technical data packages production and required engineering changes prior to Initial Operational Capability.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / EOD Equipment	Item Number / Title [DODIC]: 1 / EOD - CREW Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

(8) VN850 PRODUCT IMPROVEMENT: Engineering to improve EOD Equipment in production for design and technical advances during manufacturing and production for Radiographic Digital Imaging System and sub-surface ordnance and IED Locators.

(9) VN860 ACCEPTANCE TEST & ACCEPTANCE: Inspect on production EOD tools Radiographic Digital Imaging System being procures prior to taking delivery.

(10) VNTNG INITIAL TRAINING: Provides new equipment training, manuals, and computer based training to EOD users and training units to align to production and fielding for radiographic digital imaging systems and subsurface ordnance and IED locators.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / EOD Equipment	Item Number / Title [DODIC]: 1 / EOD - CREW Equipment

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) EOD ROBOTICS		2020	FLIR / Boston, MA	C / FFP	NAVSEA	Apr 2020	Apr 2021	73	126,534.00	Y		Sep 2017
1.1.1) EOD ROBOTICS		2021	FLIR / Boston, MA	C / FFP	NAVSEA	Apr 2021	Apr 2022	29	126,586.00	Y		Sep 2017
3.1.1) JOINT CREW(†)		2016	NORTHROP GRUMMAN / San Diego, CA	C / FPIF	NAVSEA	Jul 2016	Mar 2017	25	117,160.00	Y		Oct 2014
3.1.1) JOINT CREW(†)	✓	2017	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Aug 2017	Dec 2018	577	139,400.00	Y		Aug 2016
3.1.1) JOINT CREW(†)	✓	2018	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Jun 2018	Dec 2019	35	348,580.00	Y		Aug 2016
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS)(†)	✓	2018	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Jun 2018	Dec 2019	75	378,666.00	Y		Aug 2016
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS)(†)	✓	2019	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Jan 2019	May 2020	50	498,000.00	Y		Aug 2016

(†) 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 / 04 / 6	**P-1 Line Item Number / Title:** 5509 / EOD Equipment	**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	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	
3.1.1) JOINT CREW (4)																															
	1	2016	NAVY	25	0	25										A -	-	-	-	-	-	-	-	25							0
✓	1	2017	NAVY	577	0	577																							A -	-	577
✓	1	2018	NAVY	35	0	35																									35
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) (5)																															
✓	2	2018	NAVY	75	0	75																									75
✓	2	2019	NAVY	50	0	50																									50
							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 / 04 / 6	**P-1 Line Item Number / Title:** 5509 / EOD Equipment	**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

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	
3.1.1) JOINT CREW (4)																															
	1	2016	NAVY	25	25	0																									0
✓	1	2017	NAVY	577	0	577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	73	72	72	72	72	72	72			0
✓	1	2018	NAVY	35	0	35									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) (5)																															
✓	2	2018	NAVY	75	0	75									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
✓	2	2019	NAVY	50	0	50																A -	-	-	-	-	-	-	-	-	50
							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 / 04 / 6	**P-1 Line Item Number / Title:** 5509 / EOD Equipment	**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

Cost Elements (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	
3.1.1) JOINT CREW (4)																															
	1	2016	NAVY	25	25	0																									0
✓	1	2017	NAVY	577	577	0																									0
✓	1	2018	NAVY	35	0	35	-	-	10	10	10	5																			0
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) (5)																															
✓	2	2018	NAVY	75	0	75	-	-	8	8	8	8	8	8	8	7	7	5													0
✓	2	2019	NAVY	50	0	50	-	-	-	-	-	-	-	6	6	6	6	6	6	7	7										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 / 04 / 6	**P-1 Line Item Number / Title:** 5509 / EOD Equipment	**Item Number / Title [DODIC]:** 1 / EOD - CREW 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	NORTHROP GRUMMAN - San Diego, CA			TBD	0	0	0	0	0	0	0	0
2	NORTHROP GRUMMAN - San Diego, CA			TBD	0	0	0	0	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-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment	**P-1 Line Item Number / Title:** 5543 / Items Less Than $5 Million

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)*	79.480	5.378	5.071	6.356	0.000	6.356	4.686	4.616	4.755	5.026	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	79.480	5.378	5.071	6.356	0.000	6.356	4.686	4.616	4.755	5.026	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**79.480**	**5.378**	**5.071**	**6.356**	**0.000**	**6.356**	**4.686**	**4.616**	**4.755**	**5.026**	**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:

RA004 - QUALITY EVAL TECH & EQUIPMENT (QETE): Provides funding to procure test systems and equipment in support of the Navy weapons systems and ordnance Quality Evaluation (QE) Program. The purpose of the Navy QE Program is to ensure that only safe, quality, reliable, and ready Navy and Marine Corps weapons systems and ordnance items are provided to the Fleet. The result of the QE stock surveillance testing is technical readiness data used to predict when items degrade to the point where they become unsafe to store or would fail to function (unreliable) when needed and should be removed from service.

RA005 - FLEET MINE SUPPORT EQUIPMENT: Mine Countermeasure (MCM) Targets are used to physically and electronically emulate foreign mine threats for Fleet training, exercises, ranges, and platform and system validation. Instrumented MCM targets can be programmed to behave and function like real foreign mine threats for mine sweeping and platform validation whereas non-instrumented MCM targets emulate foreign threats physically for mine hunting, mine neutralization, and system validation.

RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH]: RA007 funding supports major initial replacement systems for the Griffin Missile (GMS) Program to include Electro-Optical Infra-Red sensor with laser designator, Battlefield Management System, Launcher/Launcher components. Funding also procures all technical refresh upgrades of the GMS hardware and software aboard Patrol Coastal (PC) ships. Upgrades will include: Battlefield Management System (BMS) workstation hardware, latest version of BMS system software, and refresher training. Funds will also support management of contractor efforts, preparation of installation plans, performance of ship checks, procurement of materials, oversight of shipboard installation and Quality Assurance (QA), conduct of sparing analysis, reliability analysis, system safety analysis, logistical support, installation and testing of all software and shipboard training.

RA003 - INDUSTRIAL FACILITIES: Description: Provides funding for the procurement of industrial equipment in support of core manufacturing and production requirements at the Government-Owned/ Contractor- Operated (GOCO) Naval Industrial Reserve Ordnance Plant (NIROP) Allegany Ballistics Laboratory (ABL) located in Rocket Center, WV. NIROP ABL is a key U.S. military industrial facility that is the source of tactical missile propulsion systems, fuzes, conventional warheads, metal and composite structures and precision projectiles in accordance with the Defense Industrial Reserve Act (10 USC 2535). Supports environmental, safety, energy conservation, and major repair projects at the GOCO facility.

[P40A / USFFC - ORDNANCE MATERIAL HANDLING EQUIPMENT (BSO 60)]: Funding supports the procurement of swing-mast/side loader forklifts and tow tractors (collectively referred to as material handling equipment) to move ordnance into and out of narrow-door storage facilities in support of ship replenishment at designated NMCLANT 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 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment		**P-1 Line Item Number / Title:** 5543 / Items Less Than $5 Million	
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	Items Less Than $5 Million	P-5a			- / 79.480	- / 5.378	- / 5.071	- / 6.356	- / -	- / 6.356
P-40	**Total Gross/Weapon System Cost**				**- / 79.480**	**- / 5.378**	**- / 5.071**	**- / 6.356**	**- / 0.000**	**- / 6.356**

*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:

This generic (non-weapons systems specific) test equipment is needed to assess the effects of aging and exposure to environmental conditions on Navy weapons systems and ordnance such as mines, gun ammunition, missiles, pyrotechnics, demolition systems/devices, bombs, and torpedoes throughout the in-service portion of their life cycle and will be located at NAVSEA engineering field activities. Requirements for the test equipment come from a need to replace or modernize obsolete or economically non-repairable equipment or to acquire new or expanded generic test capabilities when new evaluation techniques or process are needed. The equipment procured by these funds are generally "one of a kind" and are used to support generic Navy weapons systems and ordnance types. Weapons systems specific equipment is procured/funded via the individual weapons system Program Management offices. After the weapon specific equipment has entered the inventory, these funds adapt the capability, if feasible, to become more generic and support more than one weapon system. This reduces the overall economic burden to the Navy.

The FY 2021 budget for Items Less Than $5 Million reflects a net increase over the FY 2020 budget of $1.285M. Justification follows:

A $1.706M increase in FY2021 supports a new BSO-60 U.S. Fleet Forces Command requirement to procure specialized Ordnance Material Handling Equipment for maneuvering vertical launch missiles at designated NMCLANT sites. Specific Commands provide the receipt, storage, and issue of ordnance to ships. Recent growth in mission to support Vertical Launch System (VLS) missiles requires the use of specialized Material Handling Equipment (MHE). Explosive magazines at multiple sites are antiquated arch type magazines with doors less than 9 feet wide, and another explosive storage location has a narrow tunnel entrance and tight curves which restricts maneuvering. These sites require specialized equipment to maneuver VLS missiles into and within the magazines/tunnels. Without this specialized handling equipment, these sites will not be certified to handle and store VLS missiles, which will restrict timely movement of ordnance to support reloading requirements.

A $1.383M increase to the Fleet Mine Support Equipment Program (MCM TARGETS - RA005) reflects increased pricing to support priorities in cyber, industrial maintenance equipment, miniaturization of payload components, batteries and spares.

A $0.004M increase to the Industrial Facilities Program (RA003) is a result of normal fluctuations in pricing for this program. FY 2021 funding for the Industrial Facilities Program (RA003) will support the procurement of environmental handling unit equipment in support of energetics production climate control facility requirements at NIROP ABL, Rocket Center, WV. The current environmental units are aging and in need of repair. This project consists of replacing an environmental unit on Plant 1 of the NIROP ABL facility. The current environmental unit has degraded to the point of needing replacement. Replacing the environmental unit will lead to greater efficiency in achieving program specification requirements for the energetics processing buildings and reduce operational costs.

A $1.697M decrease reflecting an end to the Griffin Missile System (GMS) Initial Tech Refresh Program (RA007) based on evaluation of effectiveness and decision to cancel updates and technical refresh of the PC Griffin system.

A $0.111M net decrease to the Quality Evaluation Technical & Equipment (QETE - RA004) program is due to an issue requiring redirection of funding to support Navy Explosive Safety Management Initiatives.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy | **Date:** February 2020

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6 | **P-1 Line Item Number / Title:** 5543 / 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) MAINTENANCE SUPPORT ACTIVITIES																				
1.1) RA004 - QUALITY EVAL TECH & EQUIPMENT (QETE) (1)	B		-	-	21.695	-	-	1.478	-	-	1.516	-	-	1.405	-	-	-	-	-	1.405
1.2) USFFC - ORDNANCE MATERIAL HANDLING EQUIPMENT (BSO 60) (2)	A		-	-	-	-	-	-	-	-	-	-	-	1.706	-	-	-	-	-	1.706
Subtotal: 1) MAINTENANCE SUPPORT ACTIVITIES			**-**	**-**	***21.695***	**-**	**-**	***1.478***	**-**	**-**	***1.516***	**-**	**-**	***3.111***	**-**	**-**	**-**	**-**	**-**	***3.111***
2) MINE COUNTERMEASURES FORCES																				
2.1) RA005 - FLEET MINE SUPPORT EQUIPMENT (3)	B		-	-	14.099	-	-	1.785	-	-	1.373	-	-	2.756	-	-	-	-	-	2.756
Subtotal: 2) MINE COUNTERMEASURES FORCES			**-**	**-**	***14.099***	**-**	**-**	***1.785***	**-**	**-**	***1.373***	**-**	**-**	***2.756***	**-**	**-**	**-**	**-**	**-**	***2.756***
3) FRIGATES - MISSILE																				
3.1) RA006 - GRIFFIN MISSILE SYSTEM (GMS)	A		4,928K	5	24.639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH	A		-	-	6.313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) FRIGATES - MISSILE			**-**	**-**	***30.952***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4) PATROL COMBATANTS																				
4.1) RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH (4)	A		-	-	3.485	-	-	1.635	-	-	1.697	-	-	-	-	-	-	-	-	-
Subtotal: 4) PATROL COMBATANTS			**-**	**-**	***3.485***	**-**	**-**	***1.635***	**-**	**-**	***1.697***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5) TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER																				
5.1) RA003 - INDUSTRIAL FACILITIES(†)	A		1,542K	6	9.249	480,000.00	1	0.480	485,000.00	1	0.485	489,000.00	1	0.489	-	-	-	489,000.00	1	0.489
Subtotal: 5) TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER			**-**	**-**	***9.249***	**-**	**-**	***0.480***	**-**	**-**	***0.485***	**-**	**-**	***0.489***	**-**	**-**	**-**	**-**	**-**	***0.489***
Total			**-**	**-**	**79.480**	**-**	**-**	**5.378**	**-**	**-**	**5.071**	**-**	**-**	**6.356**	**-**	**-**	**-**	**-**	**-**	**6.356**

Note: Subtotals or Totals in this Exhibit P-40a 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 / 04 / 6	**P-1 Line Item Number / Title:** 5543 / Items Less Than $5 Million	**Aggregated Items Title:** Items Less Than $5 Million

(†) indicates the presence of a P-5a

Footnotes:

(1) $0.087 net decrease to the Quality Evaluation Technical & Equipment (QETE - RA004) program from FY 2020 to FY2021 due to an issue requiring funding to support Navy Explosive Safety Management Initiatives.

(2) Unit cost varies by type and model of each piece of equipment.

(3) The Fleet Mine Support Equipment Program (MCM TARGETS) FY 2021 budget reflects a $1.383 increase from FY 2020, which includes $0.700M increase per year over FY 2020 President's budget request starting in FY 2021 to support priorities in cyber, industrial maintenance equipment, miniaturization of payload components, batteries and spares.

(4) Funding for this line ends in FY 2020 due to decision to cancel updates and technical refresh of the PC Griffin system, including Battle Management System (BMS) software and hardware and Brite Star II EO/IR camera.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5543 / 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
5) TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER												
5.1) RA003 - INDUSTRIAL FACILITIES		2017	Waters / Millford, MA	Reqn	NAWC CL	Jun 2019	Oct 2019	1	463,000.00	Y		Dec 2018
5.1) RA003 - INDUSTRIAL FACILITIES		2018	DLA Aviation / RICHMOND, VA	MIPR	DLA/AVIATION	Jun 2018	Oct 2018	1	985,000.00	Y		Jan 2018
5.1) RA003 - INDUSTRIAL FACILITIES		2019	DLA Aviation / RICHMOND, VA	MIPR	DLA/AVIATION	Mar 2019	Jul 2019	1	480,000.00	Y		Oct 2018
5.1) RA003 - INDUSTRIAL FACILITIES		2020	DLA Troop Support / Philadelphia, PA	MIPR	DLA/Troop SupportDLA/ Troop Support	Mar 2020	Jul 2020	1	485,000.00	Y		Oct 2019
5.1) RA003 - INDUSTRIAL FACILITIES		2021	DLA Troop Support / Philadelphia, PA	MIPR	DLA/Troop Support	Mar 2021	Jun 2021	1	489,000.00	Y		Oct 2020

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy 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)*	0.000	0.000	38.462	86.356	0.000	86.356	79.795	71.385	72.662	74.098	385.957	808.715
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	38.462	86.356	0.000	86.356	79.795	71.385	72.662	74.098	385.957	808.715
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**38.462**	**86.356**	**0.000**	**86.356**	**79.795**	**71.385**	**72.662**	**74.098**	**385.957**	**808.715**
(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:

Funds were realigned from BLI 5530 to BLI 5231 beginning in FY15, and have been realigned back to BLI 5530 beginning in FY20.

The Anti-Ship Missile Decoy Program covers a family of decoys and the equipment to deploy them. It is an essential element of the Anti-Ship Missile Defense tactics to counter the threat of enemy homing missiles. Nulka is a joint program with Australia, and is currently in service with the Australian, Canadian, and United States Navies. Nulka consists of the Decoy Launching System (DLS) (MK 53) and Offboard Active Decoy (MK 234). This line contains various equipment and subsystems for a system which will provide the capability to defeat the effectiveness of hostile Anti-Ship cruise missiles. The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies, and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the EW operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. Six of the final seven DLS units are being procured under BLI 5231. The last DLS will be procured under this budget (BLI 5530), which starts in FY20.

The last full decoy will be procured in FY20 under VV002. Funding from VV002 in the FY 2020 President's Budget request was realigned to VV200, VV201, VV202, VV203, VV005, VV006, and VV003. Starting in FY20, decoy procurement will be broken out into separate procurement of subassemblies. The Legacy Nulka decoy consists of the kit assembly, rocket motor assembly (RMAs), canister assembly and legacy payload. The legacy Nulka decoy can no longer be procured due to obsolescence issues. Starting in FY20, these obsolescence issues will be addressed by new production of kit assemblies (VV200), RMAs (VV201), and canister assemblies (VV202). Starting in FY21, the legacy payload obsolescence will be addressed by procurement of Nulka X/Y payloads (VV005). The Advanced Nulka decoy consists of the advanced flight assembly and Advanced Nulka payload. Production of Advanced Flight Assemblies (VV203) will begin in FY21. Production of Advanced Nulka Payloads (VV006) will begin in FY22 to counter advanced threats.

VV001: Funding is for procurement of MK 53 DLS.

VV002: Funding is for procurement of MK 234 Nulka decoy. FY20 funding will procure the last MK 234 Nulka decoy.

VV003: Funding is for Engineering Change Proposals (ECPs)/Ordinance Alterations (ORDALT) to address obsolescence, quality assurance, reliability, safety, Electromagnetic Interference (EMI), and diminishing manufacturing source issues. ECP funding will support DLS hardware updates including Circuit Card Assembly (CCA) redesigns, Inertial Measurement Unit (IMU) initialization improvements, Power Supply

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy 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		

System (PSS) modernization. Logistics funding will support maintenance of decoy and special purpose test equipment, non-recurring costs to produce engineering equipment, and configuration management tools for Flight Control Units, Propulsion Igniter Units, Thrust Control Units, Thermal Batteries, Spin Control Units, Rocket Motor Assemblies, Canister Assemblies, and Advanced Flight Assemblies.

VV830: Funding is for Production Engineering support to the MK 234 Nulka Decoy, Nulka Kit Assemblies, Rocket Motor Assembly, Canister Assembly, Nulka X/Y Payloads, and Advanced Nulka Payloads.

VV500: Funding is for procurement of Advanced Offboard EW mass models, ALQ-248 pods, and Production Support. Production Support activities include: pre-installation work ups and documentation, updates to training materials, and sparing support. Funding for this program ends in FY22.

VV200: Funding is for procurement of Nulka Kit Assemblies (includes: varying quantities and combinations of: Flight Control Units, Propulsion Igniter Units, Thrust Control Units, Spin Control Units, and Thermal Batteries based on requirements).

VV201: Funding is for procurement of Rocket Motor Assembly.

VV202: Funding is for procurement of Canister Assembly.

VV203: Funding is for procurement of Advanced Flight Assemblies.

VV005: Funding is for procurement of Nulka X/Y Payloads. The EW payload was developed under an ONR program that targets specific threats that the current payload on the Nulka decoy does not. The payload provides an advanced Electronic Warfare (EW) transmitter and increased signal processing capability.

VV006: Funding is for procurement of Advanced Nulka Payloads.

VVINS: Funding is for the installation of Nulka Systems, and Fleet Modernization Program installs.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy 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	5530 - ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / 0.000	- / -	- / 34.179	- / 79.359	- / -	- / 79.359
P-3a	1 / VV001 NULKA SYSTEMS (TBD)				- / 0.000	- / 0.000	- / 4.283	- / 6.997	- / 0.000	- / 6.997
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 0.000**	**- / 38.462**	**- / 86.356**	**- / 0.000**	**- / 86.356**

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	5530 - ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / VV001 NULKA SYSTEMS (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 11.280
P-40	**Total Gross/Weapon System Cost**				**- / 79.795**	**- / 71.385**	**- / 72.662**	**- / 74.098**	**- / 385.957**	**- / 808.715**

*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 / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Aggregated Items Title:** 5530 - ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS																				
1.1) Nulka Decoys (1)(†)	A		-	-	-	-	-	-	2,274K	1	2.274	-	-	-	-	-	-	-	-	-
Subtotal: 1) VV002 - NULKA DECOYS			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***2.274***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT (2)																				
2.1) ECPs	A		-	-	-	-	-	-	-	-	3.198	-	-	2.866	-	-	-	-	-	2.866
2.2) Logistics/ Production Support	A		-	-	-	-	-	-	-	-	6.742	-	-	3.295	-	-	-	-	-	3.295
Subtotal: 2) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***9.940***	**-**	**-**	***6.161***	**-**	**-**	**-**	**-**	**-**	***6.161***
3) VV830 - PRODUCTION ENGINEERING (3)																				
3.1) Production Engineering	A		-	-	-	-	-	-	-	-	2.043	-	-	2.760	-	-	-	-	-	2.760
Subtotal: 3) VV830 - PRODUCTION ENGINEERING			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***2.043***	**-**	**-**	***2.760***	**-**	**-**	**-**	**-**	**-**	***2.760***
4) VV500 - ADVANCED OFFBOARD/EW																				
4.1) AOEW: Mass Models	A		-	-	-	-	-	-	-	-	-	119,517.00	4	0.478	-	-	-	119,517.00	4	0.478
4.2) AOEW: AN/ ALQ-248 Pods (4)	A		-	-	-	-	-	-	-	-	-	2,712K	8	21.693	-	-	-	2,712K	8	21.693
4.3) AOEW: Production Support	A		-	-	-	-	-	-	-	-	-	-	-	10.500	-	-	-	-	-	10.500
Subtotal: 4) VV500 - ADVANCED OFFBOARD/EW			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***32.671***	**-**	**-**	**-**	**-**	**-**	***32.671***
5) VV200 - NULKA KIT ASSEMBLIES																				
5.1) Nulka Kit Assemblies(†)	A		-	-	-	-	-	-	122,250.00	70	8.558	123,858.00	74	9.165	-	-	-	123,858.00	74	9.165
Subtotal: 5) VV200 - NULKA KIT ASSEMBLIES			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***8.558***	**-**	**-**	***9.165***	**-**	**-**	**-**	**-**	**-**	***9.165***
6) VV201 - ROCKET MOTOR ASSEMBLY (RMA)																				
6.1) Rocket Motor Assembly (RMA)(†)	A		-	-	-	-	-	-	132,000.00	62	8.184	133,900.00	74	9.909	-	-	-	133,900.00	74	9.909
Subtotal: 6) VV201 - ROCKET MOTOR ASSEMBLY (RMA)			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***8.184***	**-**	**-**	***9.909***	**-**	**-**	**-**	**-**	**-**	***9.909***
7) VV202 - CANISTER ASSEMBLY																				
7.1) Canister Assembly(†)	A		-	-	-	-	-	-	53,000.00	60	3.180	53,560.00	61	3.267	-	-	-	53,560.00	61	3.267
Subtotal: 7) VV202 - CANISTER ASSEMBLY			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	***3.180***	**-**	**-**	***3.267***	**-**	**-**	**-**	**-**	**-**	***3.267***

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Aggregated Items Title:** 5530 - ANTI SHIP MISSILE DECOY 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)
8) VV203 - ADVANCED FLIGHT ASSEMBLIES																				
8.1) Advanced Flight Assemblies(†)	A		-	-	-	-	-	-	-	-	-	450,000.00	2	0.900	-	-	-	450,000.00	2	0.900
Subtotal: 8) VV203 - ADVANCED FLIGHT ASSEMBLIES			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***0.900***	**-**	**-**	**-**	**-**	**-**	***0.900***
9) VV005 - NULKA PAYLOAD (5)																				
9.1) Nulka Payload(†)	A		-	-	-	-	-	-	-	-	-	538,000.00	27	14.526	-	-	-	538,000.00	27	14.526
Subtotal: 9) VV005 - NULKA PAYLOAD			**-**	**-**	***0.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***14.526***	**-**	**-**	**-**	**-**	**-**	***14.526***
Total			**-**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**34.179**	**-**	**-**	**79.359**	**-**	**-**	**-**	**-**	**-**	**79.359**

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) VV002 - Unit cost increase in FY20 is due to single procurement of final full decoy (payload plus flight assembly). Funding from VV002 in the FY 2020 President's Budget request was realigned to VV200, VV201, VV202, VV203, VV005, VV006, and VV003. Starting in FY21, payload procurement will be in VV005 and VV006, and flight assembly procurement will be in VV203.

(2) VV003 - Engineering Changes and Logistics Support - Increase in FY20 ECP funding will support DLS hardware updates including Circuit Card Assembly (CCA) redesigns, Inertial Measurement Unit (IMU) initialization improvements, Power Supply System (PSS) modernization. Increase in FY20 logistics funding will support maintenance of decoy and special purpose test equipment, non-recurring costs to produce engineering equipment, and configuration management tools for Flight Control Units, Propulsion Igniter Units, Thrust Control Units, Thermal Batteries, Spin Control Units, Rocket Motor Assemblies, Canister Assemblies, and Advanced Flight Assemblies.

(3) VV830 - Funding is for Production Engineering support to the MK 234 Nulka Decoy, Nulka Kit Assemblies, Rocket Motor Assembly, Canister Assembly, Advanced Flight Assemblies, Nulka X/Y Payloads, and Advanced Nulka Payloads. Increases starting in FY21 are due to Production Engineering costs for new Nulka Payload Assembly (PU: VV005).

(4) VV500 - An increase in FY21 funding from the FY 2020 President's Budget request to the FY 2021 President's Budget request allows for procurement of 8 pod units. As a result, mass model units are reduced from nine to four units. Additionally, this increase also facilitates Production Support activities to include: pre-installation work ups and documentation, updates to training materials, and sparing support.

(5) VV005 - Funding has been added for procurement of Nulka-X/Y Payloads. The EW payload was developed under an ONR program that targets specific threats that the current payload on the Nulka decoy does not. The payload provides an advanced Electronic Warfare (EW) transmitter and increased signal processing capability.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System	Aggregated Items: 5530 - ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS												
1.1) Nulka Decoys (1)(†)		2020	BAES / AUSTRALIA	C / TBD	Canberra, Australia	Mar 2020	Sep 2021	1	2,274K	Y		
5) VV200 - NULKA KIT ASSEMBLIES												
5.1) Nulka Kit Assemblies		2020	BAES / AUSTRALIA	C / TBD	Canberra, Australia	Jul 2020	Jan 2022	70	122,250.00	Y		
5.1) Nulka Kit Assemblies		2021	BAES / AUSTRALIA	C / TBD	Canberra, Australia	Jul 2021	Jan 2023	74	123,858.00	Y		
6) VV201 - ROCKET MOTOR ASSEMBLY (RMA)												
6.1) Rocket Motor Assembly (RMA)		2020	TBD / AUSTRALIA	C / TBD	Canberra, Australia	Jul 2020	Jan 2022	62	132,000.00	Y		
6.1) Rocket Motor Assembly (RMA)		2021	TBD / TBD	C / TBD	TBD	Jul 2021	Jan 2023	74	133,900.00	Y		
7) VV202 - CANISTER ASSEMBLY												
7.1) Canister Assembly		2020	TBD / TBD	C / TBD	TBD	Jul 2020	Nov 2021	60	53,000.00	Y		
7.1) Canister Assembly		2021	TBD / TBD	C / TBD	TBD	Jul 2021	Nov 2022	61	53,560.00	Y		
8) VV203 - ADVANCED FLIGHT ASSEMBLIES												
8.1) Advanced Flight Assemblies		2021	BAES / AUSTRALIA	SS / FFP	Canberra, Australia	Jul 2021	Sep 2022	2	450,000.00	Y		
9) VV005 - NULKA PAYLOAD												
9.1) Nulka Payload		2021	Harris / Clifton, NJ	SS / CPFF	TBD	Jul 2021	Jan 2023	27	538,000.00	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 / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Aggregated Items:** 5530 - ANTI SHIP MISSILE DECOY SYSTEM

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) VV002 - NULKA DECOYS																															
1.1) Nulka Decoys [1]																															
	11	2020	NAVY	1	0	1						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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 / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Aggregated Items:** 5530 - ANTI SHIP MISSILE DECOY 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	BAES - AUSTRALIA			192	0	6	12	18	0	0	12	12

"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 / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Modification Number / Title:** 1 / VV001 NULKA 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)*	0.000	0.000	4.283	6.997	0.000	6.997	0.000	0.000	0.000	0.000	0.000	11.280
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	4.283	6.997	0.000	6.997	0.000	0.000	0.000	0.000	0.000	11.280
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**4.283**	**6.997**	**0.000**	**6.997**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**11.280**
(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:

Program funds the procurement and installation of the MK53 Nulka System.

[NULKA SYSTEMS] Funds the procurement and installation of the MK53 Nulka Decoy Launching System (DLS). The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the EW operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. Six of the final seven DLS units are being procured under BLI 5231. The last DLS will be procured under BLI 5530, which starts in FY20.

Note: Since the FY 2020 President's Budget request, the FY20 increase to installation cost is due to the requirement to procure additional platforms and associated development needed to install the Nulka system.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Modification Number / Title:** 1 / VV001 NULKA SYSTEMS
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: VV001 NULKA SYSTEMS												
B Kits												
Recurring												
1.1.1) NULKA SYSTEMS - NonOrganic [6]	- / -	- / -	1 / 1.460	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.460
Subtotal: Recurring	*- / 0.000*	*- / -*	*- / 1.460*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.460*
Subtotal: VV001 NULKA SYSTEMS	*- / -*	*- / -*	*1 / 1.460*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*1 / 1.460*
Subtotal: Procurement, All Modification Items	*- / 0.000*	*- / -*	*- / 1.460*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 1.460*
Installation												
Modification Item 1 of 1: VV001 NULKA SYSTEMS	- / 0.000	- / 0.000	- / 2.823	- / 6.997	- / 0.000	- / 6.997	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.820
Subtotal: Installation	*- / 0.000*	*- / -*	*- / 2.823*	*- / 6.997*	*- / -*	*- / 6.997*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 0.000*	*- / 9.820*
Total												
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**4.283**	**6.997**	**0.000**	**6.997**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**11.280**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5530 / Anti-ship Missile Decoy System	**Modification Number / Title:** 1 / VV001 NULKA SYSTEMS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: VV001 NULKA SYSTEMS

Manufacturer Information

Manufacturer Name: Sechan Electronics, Inc.	Manufacturer Location: Lititz, PA
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 14

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

Installation Information

Method of Implementation: AIT:: Installation Name: NULKA 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	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	0 / 2.823	1 / 6.997	0 / 0.000	1 / 6.997	- / -	- / -	- / -	- / -	0 / 0.000	1 / 9.820
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	0 / 2.823	1 / 6.997	0 / 0.000	1 / 6.997	- / -	- / -	- / -	- / -	0 / 0.000	1 / 9.820

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

Footnotes:

(6) VVINS - Funding is for the installation of Nulka Systems, and Fleet Modernization Program installs. Since the FY 2020 President's Budget request, FY20 funding increase is due to the requirement to procure additional platforms and associated development needed to install the Nulka system.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods

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)*	439.041	56.834	67.229	69.240	0.000	69.240	83.046	84.919	83.088	84.330	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	439.041	56.834	67.229	69.240	0.000	69.240	83.046	84.919	83.088	84.330	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**439.041**	**56.834**	**67.229**	**69.240**	**0.000**	**69.240**	**83.046**	**84.919**	**83.088**	**84.330**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.322	0.140	0.285	-	0.285	0.390	0.400	0.405	0.413	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The OPN 5661 line procures, installs and delivers training devices at the seven schoolhouses worldwide. These funds support Hull, Mechanical, and Electrical (HM&E), Navigation and Combat Control System training requirements, training upgrades and engineering sustainment for the Submarine Weapon Systems. Training devices develop system operation and seamanship skills to submarine crews utilized in all submarine mission sets. Funding includes modernization of training devices to maintain compatibility with existing fleet operational equipment and to implement Trainer Enhancement Changes (TECs) as directed by the Fleet Type Commanders and Resource Sponsor (N97). Funding also includes procurement of training infrastructure and devices at Portsmouth Naval Shipyard for fundamental skills required for crew certification and proficiencies during extended maintenance periods.

Line item 5661 is broken into five functional areas to support submarine training: Hull Mechanical & Electrical Trainers (HM&E), Engineering Trainers, Navigation Trainers, Combat Control Acoustic Trainers and Attack Center Trainers.

[P40A / Submarine Training]: This line provides funds to procure and modernize training devices to keep them compatible with Fleet operational equipment and to implement Training Enhancement Changes (TECs) to the training systems.

[P40A / TD 100 HM&E TRAINERS]: This line procures HM&E Fleet and Team Trainer Technical Training Equipment (TTE), Training Devices and Training Enhancement Changes (TECs), which are centrally managed systems, support equipment and modifications to simulators such as: Submarine Ship Control Operator Trainer (SCOT), Virginia Submarine Ship Control Operator Trainer (VSCOT) and Firefighter Trainer (FFT). Technical Training Equipment/Training Devices sustain high fidelity training and replaces equipment beyond economical repair or procures new equipment. Funds also procure Submarine High Risk Trainer subsystems to meet requirements for Pressurized Submarine Escape Trainers and Damage Control Wet Trainers. This line also provides configuration changes for the Submarine Multipurpose Reconfigurable Training System (MRTS). The MRTS family includes VA CLASS Torpedo Room, Emergency Diesel Generator, Weapons Launch Console Team Trainer, and Common Submarine Radio Room (CSRR) trainers. FY 20 added a one time increase of $5M for Integrated Training and
Maintenance Support Systems (Issue #77277).

[P40A / TD200 ENGINEERING TRAINERS]: This line procures and installs Nuclear Propulsion Plant Fleet Interactive Display Equipment (FIDE) trainers, Virtual Interactive Display Equipment (VIDE), Training Enhancement Changes (TECs), Multipurpose Reconfigurable Training Systems and other Navy Engineering Training devices as identified by the Submarine Learning Center (SLC) and approved by the Chief

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	
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		

of Naval Operations (CNO) for use at the submarine training activities. FIDEs/VIDEs support multiple ship classes and configurations at seven different geographic sites and Portsmouth Naval Shipyard, each requiring different levels of installation work. FIDE and VIDE are required by NAVSEA 08 to provide advanced shore-based nuclear operator training.

[P40A / TD 300 NAVIGATION TRAINERS]: Navigation Safety of Ship Trainer line procures Submarine Fleet and Team Navigation trainer equipment and systems which emulate ship characteristics. Navigation training systems include, but are not limited to: Virtual Environment Submarine (VESUB), Submarine Piloting and Navigation Trainers (SPAN), Reconfigurable SPAN (RSPAN), Submarine Bridge Trainer/ Integrated SPAN (SBT/ISPAN) and associated upgrades to all Homeports, Navigation Databases, Periscope Simulation (PSIM), Harbor Databases, Electronic Chart Display and Information Systems-Navy (ECDIS-N) and PC-based Team Trainers including Mini-SPANs. Single Story Bridge Trainers will be procured for Homeports where an SBT Dome MILCON cannot be accommodated. The SBT/ISPAN is comprised of Virtual Tactical, Beam Forming Sonar Simulation Trainer, Voyage Management System (VMS), ECDIS-N, Radar Simulation, Navigation Aids, Periscope Simulation (PSIM), and Harbor Databases. These training systems and Training Enhancement Changes (TECs) are identified by the Submarine Learning Center (SLC) and approved by the Fleet Type Commanders, for use at the submarine training activities.

[P40A / TD 400 COMBAT CONTROL ACOUSTIC TRAINERS]: This line procures Submarine Common Operational Analysis and Employment Trainer (COAET) fundamental and employment skill level, Sonar Employment Trainer (SET) and Beam Forming Sonar Simulation Trainers (BSST). These trainers provide the acoustic operator employment skills and team training for fleet requirements. Funds also provide for TECs, Virtualized Tactical Control (VTAC), Periscope Simulation (PSIM), Submarine Skills Network (SUBSKILLSNET), Weapons Control, Mission Payload Control, Advanced Processing Build (APB)/ Technical Insertion (TI),and Sonar Tactical Decision Aid (STDA) implementation. The Sonar Employment Trainer (SET) provides acoustic operator employment Fleet and team training for submarine sonar systems. SET is used to train advanced operators in the Advanced Sonar Employment and Sonar Supervisor courses. The SET is periodically upgraded to support current software Advanced Processor Builds (APBs) and Technical Insertions (TIs). The BSST is a light weight, medium fidelity sonar operator trainer for journeyman level training. COAET provides operator and introductory team training to submarine force personnel prior to entry into the Submarine Multi Mission Team Trainer (SMMTT) as well as supplemental training to off-load the heavily utilized submarine attack center trainers. COAET utilizes partial tactical builds and emulations of the latest Sonar, Combat Control, Imaging and Electronic Warfare Systems which provide an environment substantially equivalent to that found on board ship, thus enabling students to develop and maintain the attack center expertise necessary to support Fleet operations. COAET supports individual operator/pipeline training at NAVSUBSCOL and fleet responsive training at all other fleet training sites.

[P40A / TD 500 ATTACK CENTER TRAINERS]: The SUBMARINE MULTI MISSION TEAM TRAINER (SMMTT) line procures shore based Combat System Team Trainers capable of training personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment to achieve submarine force readiness levels. The program is required to match the shore based configuration to the fleet modernized Hardware/Software(HW/SW) tactical builds. This includes the required capability to connect Attack Center to Attack Center for dual crew training and blue on blue or blue on red as directed by the fleet and the Aggressor Squadron. The SMMTT trainer supports operator, employment, strike, and Battle Group training for enlisted and officer pipelines for these systems and provides operators and combat teams the opportunity to train ashore prior to and between deployments and is also used for SSN/SSGN/SSBN crew certification. SMMTT integrates the Combat Control system (CCS) AN BYG-1 and Acoustic Rapid Cots Insertion (ARCI) AN/BQQ-10 tactical hardware and software builds with the All World Environment Simulation to provide realistic simulation using Authorized Navy databases and programs. This line includes modifications to the functionality of the Periscope Simulator (PSIM) to provide common imaging training for submarine attack centers. This line also procures Electronic Surveillance Simulation Software. Submarine attack centers support real world recorded sensor data for playback in the training environment. This line also includes Engineering Production Model (EPM) to manage the additional TI/APB and Trainer Enhancement requirements as directed by the TYCOM. Also, funding is included for Trainer Enhancement Changes (TECs) as identified by the Submarine Learning Center and approved by the Fleet Type Commanders for use at Submarine Training activities.

[P3A / Submarine Attack Center Modifications]: Submarine Attack Center Modifications line upgrades hardware, software and simulation to match current Fleet configurations.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods

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 Training	P-5a			- / 287.891	- / 48.046	- / 57.059	- / 58.041	- / -	- / 58.041
P-3a	1 / Submarine Attack Center Modifications (TBD)				- / 151.150	- / 8.788	- / 10.170	- / 11.199	- / 0.000	- / 11.199
P-40	**Total Gross/Weapon System Cost**				**- / 439.041**	**- / 56.834**	**- / 67.229**	**- / 69.240**	**- / 0.000**	**- / 69.240**

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 Training	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Submarine Attack Center Modifications (TBD)				- / 11.529	- / 11.650	- / 11.676	- / 11.910	- / 1.624	- / 229.696
P-40	**Total Gross/Weapon System Cost**				**- / 83.046**	**- / 84.919**	**- / 83.088**	**- / 84.330**	**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 budget provided in FY2021 was reduced to support Undersea Warfare priorities. The budget will allow us to meet fleet training needs and keep simulators aligned to the Submarine Modernization plan in each Homeport. Trainer modernization must occur to match the fleet operating systems with the shore-based operating systems to ensure submarine crews are training ashore on the identical system that will be deployed. Negative training will result if training system is not matched to the shipboard system. Shore-based trainers are required for Fleet Certification and Pre-Deployment training and must match the tactical and payload configurations. FY2021 adds funding to provide Navigation Safety of Ship trainers for the SSBN Homeports.

TD100 HME TRAINERS -

1.1 HIGH RISK TRAINERS - Consolidates all similar procurements for High Risk Trainers in FY2021. Procures VA Class Hull Mechanical Electrical Training devices including integrated low-pressure electrolyzer and VA Class Block IV Torpedo Room.

1.3 VA CLASS HME NORFOLK - Combined with 1.1 in FY2021 to add VA Class trainers to the High-Risk training portfolio.

1.4 SUBMARINE TRAINING DEVICES - Funding in FY2021 to procure hydraulic components for the Submarine Hydraulics Maintenance course. Additionally, this line procures Multi-Reconfigurable Training System software engineering to support Fairbanks Morse Diesel Advanced Scenarios as required by the Fleet Diesel Red Team.

1.5 SHIP CONTROL TRAINERS - Consolidates all similar procurements for Ship Control Operator Trainers (SCOT/VSCOT). FY2021 procures two 688i Motion System tech refreshes.

1.6 SCOT MODS - Combined with 1.5 in FY2021 to consolidate SSBN and 688 Ship Control trainers.

1.7 VSCOT MODS - Combined with 1.5 in FY2021 to consolidate VA Class Ship Control trainers.

1.8 INTEGRATED TRAINING AND MAINTENANCE SUPPORT SYSTEMS - FY2020 added a one time increase of $5M for Integrated Training and Maintenance Support Systems (Issue #77277).

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	
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		

TD200 ENGINEERING TRAINERS -

2.3 CURRICULA AND TRAINING MATERIALS - Funding in FY2021 procures training materials and curricula required to teach basic and advanced nuclear power maintenance training.

TD300 NAVIGATION TRAINERS -

3.1 NAVIGATION SAFETY OF SHIP TRAINERS - Consolidates in FY2021 all similar procurements for Navigation Trainers.

3.2 SSBN SAFETY OF SHIP TRAINERS - FY2021 adds funding to provide two Safety of Ship trainers for the SSBN Homeports at a total cost of 4,641K. This is a new requirement that was established from the comprehensive review in FY2018 as a result of two Naval Warships colliding with merchants at sea resulting in damage to government property and 17 causalities at sea.

3.3 SUBMARINE BRIDGE TRAINER (SBT)/INTEGREATED SUBMARINE PILOTING AND NAVIGATION (ISPAN) - Combined with 3.1 in FY2021.

3.4 NAVIGATION TRAINER UPDATES - Combined with 3.5 in FY2021 to include Navigation Trainer updates with engineering support.

3.5 ENGINEERING SUPPORT - This line procures two Submarine Navigation Display equipment suites and associated computer hardware and software. VMS 9.5 will be procured and included in all Navigation trainers. VESUB will be tech refreshed for headsets and graphics computers. Consolidates VMS, VESUB and NAVIGATION TRAINER UPDATES lines in FY2021. Procurement directly supports Comprehensive Review Navigation Trainer Requirements.

TD400 COMBAT CONTROL ACOUSTIC TRAINERS -

4.1 FLEET RESPONSIVE TEAM TRAINERS - Consolidates all similar procurements in FY2021 for Combat Systems and Acoustic Team Trainers. FY2021 procures three Common Operator Analysis Employment Trainer (COAET) and one Sonar Employment Trainer (SET) to support officer and enlisted pipeline training and Fleet responsive training across the training domain.

4.2 SET - Combined with 4.1 in FY2021 to add SET to the Fleet responsive team trainer portfolio.

4.3 COAET Modifications - Combined with 4.1 in FY2021 to add COAET to the Fleet responsive team trainer portfolio.

TD500 ATTACK CENTER TRAINERS -

5.1 SUBMARINE ATTACK CENTERS - Consolidates in FY2021 all similar procurements for Submarine Attack Center Trainers. FY2021 procures four Submarine Attack Centers to support pre-deployment and crew certification training ashore. Trainers are critical to Fleet readiness to ensure warfighter trains ashore with the modernized combat, payload, acoustic, imaging, and electronic warfare systems.

5.2 SSBN,SSGN,SSN EPM - Consolidates all similar procurements for Engineering Production Models at the Warfare Center. This effort is critical for trainer lifecycle support, engineering changes and updates without disruption of training at the Submarine Learning sites. Includes 688, VA, SSGN and SSBN EPMs. FY2021 procures one EPM.

5.3 SSBN Submarine Multi-Mission Team Trainer (SMMTT) - Combined with 5.1 in FY2021 to include SSBN SMMTT into the Submarine attack center portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

5.4 SSN SMMTT Tailored 2/4 Model - Combined with 5.1 in FY2021 to include SSN SMMTT Tailored 2/4 Model into the Submarine attack center portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	
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		

5.5 SSN SMMTT EPM - Combined with 5.2 in FY2021 to include SSN SMMTT EPM into SSBN, SSGN, SSN EPM portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

5.6 VA SMMTT New Normal HW - Combined with 5.1 in FY2021 to include VA SMMTT HW into the Submarine attack center portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

5.8 VA SMMTT EPM - Combined with 5.2 in FY2021 to include VA SMMTT EPM into SSBN, SSGN, SSN EPM portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

5.9 SSGN SMMTT HW - Combined with 5.1 in FY2021 to include SSGN SMMTT HW into the Submarine attack center portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

5.10 SSGN SMMTT SW MODS - Combined with 5.1 in FY2021 to include SSGN SMMTT SW MODS into the Submarine attack center portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

5.11 SMMTT TECH SUPPORT - Funding decreases in FY2021 due to efficiencies realized through server virtualization and sun setting of legacy acoustic simulation tools. New submarine attack centers require less engineering support for software updates/rebuilding of servers.

5.12 SENSOR SIMULATION - Combined with 5.1 in FY2021 to include SENSOR SIMULATION into the Submarine attack center portfolio to include Development Security Operations (DEVSECOPS) acquisition and architecture.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods	Aggregated Items Title: Submarine Training

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) TD 100 HM&E TRAINERS																				
1.1) HIGH RISK TRAINERS (1)(†)	A		-	-	-	-	-	-	-	-	-	855,500.00	2	1.711	-	-	-	855,500.00	2	1.711
1.2) FIREFIGHTING TRAINER(†)	A		3,280K	3	9.840	2,738K	1	2.738	-	-	-	-	-	-	-	-	-	-	-	-
1.3) VA CLASS HME Norfolk(†)	A		-	-	-	-	-	-	838,500.00	2	1.677	-	-	-	-	-	-	-	-	-
1.4) SUBMARINE TRAINING DEVICES (2)	A		-	-	16.052	-	-	1.633	-	-	1.621	-	-	1.600	-	-	-	-	-	1.600
1.5) SHIP CONTROL TRAINERS (3)(†)	A		-	-	-	-	-	-	-	-	-	1,092K	2	2.183	-	-	-	1,092K	2	2.183
1.6) SCOT MODS	A		-	-	8.666	-	-	1.211	-	-	1.200	-	-	-	-	-	-	-	-	-
1.7) VSCOT MODS	A		-	-	7.315	-	-	0.942	-	-	0.940	-	-	-	-	-	-	-	-	-
1.8) INTEGRATED TRAINING AND MAINTENANCE SUPPORT SYSTEM	A		-	-	-	-	-	-	-	-	5.000	-	-	-	-	-	-	-	-	-
Subtotal: 1) TD 100 HM&E TRAINERS			**-**	**-**	***41.873***	**-**	**-**	***6.524***	**-**	**-**	***10.438***	**-**	**-**	***5.494***	**-**	**-**	**-**	**-**	**-**	***5.494***
2) TD200 ENGINEERING TRAINERS																				
2.1) FIDE (4)(†)	A		-	-	21.059	-	-	3.398	-	-	3.469	3,538K	1	3.538	-	-	-	3,538K	1	3.538
2.2) VIDE (5)(†)	A		-	-	3.224	-	-	1.710	-	-	1.751	1,786K	1	1.786	-	-	-	1,786K	1	1.786
Subtotal: 2) TD200 ENGINEERING TRAINERS			**-**	**-**	***24.283***	**-**	**-**	***5.108***	**-**	**-**	***5.220***	**-**	**-**	***5.324***	**-**	**-**	**-**	**-**	**-**	***5.324***
3) TD 300 NAVIGATION TRAINERS																				
3.1) NAVIGATION SAFETY OF SHIP TRAINERS (6)(†)	A		0.00	3	0.000	-	-	-	-	-	-	3,662K	2	7.323	-	-	-	3,662K	2	7.323
3.2) SSBN SAFETY OF SHIP TRAINERS (7)(†)	A		-	-	-	-	-	-	-	-	-	2,302K	2	4.605	-	-	-	2,302K	2	4.605
3.3) SBT/ISPAN(†)	A		7,773K	3	23.320	1,846K	1	1.846	3,590K	2	7.179	-	-	-	-	-	-	-	-	-
3.4) NAVIGATION TRAINER UPDATES	A		-	-	13.892	-	-	0.304	-	-	0.320	-	-	-	-	-	-	-	-	-
3.5) ENGINEERING SUPPORT (8)(†)	A		-	-	-	-	-	-	-	-	-	847,500.00	2	1.695	-	-	-	847,500.00	2	1.695
Subtotal: 3) TD 300 NAVIGATION TRAINERS			**-**	**-**	***37.212***	**-**	**-**	***2.150***	**-**	**-**	***7.499***	**-**	**-**	***13.623***	**-**	**-**	**-**	**-**	**-**	***13.623***
4) TD 400 COMBAT CONTROL ACOUSTIC TRAINERS																				

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods	Aggregated Items Title: Submarine Training

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) FLEET RESPONSIVE TEAM TRAINERS (9)(†)	A		-	-	-	-	-	-	-	-	-	1,220K	4	4.879	-	-	-	1,220K	4	4.879
4.2) SET(†)	A		6,075K	2	12.150	1,332K	1	1.332	1,356K	1	1.356	-	-	-	-	-	-	-	-	-
4.3) COAET MODIFICATIONS	A		835,107.14	56	46.766	1,122K	4	4.489	1,142K	4	4.570	-	-	-	-	-	-	-	-	-
Subtotal: 4) TD 400 COMBAT CONTROL ACOUSTIC TRAINERS			**-**	**-**	***58.916***	**-**	**-**	***5.821***	**-**	**-**	***5.926***	**-**	**-**	***4.879***	**-**	**-**	**-**	**-**	**-**	***4.879***
5) TD 500 ATTACK CENTER TRAINERS																				
5.1) SUBMARINE ATTACK CENTERS (10)(†)	A		-	-	-	-	-	-	-	-	-	5,673K	4	22.692	-	-	-	5,673K	4	22.692
5.2) SSBN, SSGN, SSN EPM (11)(†)	A		-	-	-	-	-	-	-	-	-	3,545K	1	3.545	-	-	-	3,545K	1	3.545
5.3) SSBN SMMTT	A		12,097K	1	12.097	-	-	4.176	-	-	4.253	-	-	-	-	-	-	-	-	-
5.4) SSN SMMTT TAILORED 2/4 MODEL(†)	A		-	-	-	-	-	-	8,000K	1	8.000	-	-	-	-	-	-	-	-	-
5.5) SSN SMMTT EPM(†)	A		2,257K	15	33.857	3,414K	1	3.414	3,475K	1	3.475	-	-	-	-	-	-	-	-	-
5.6) VA SMMTT NEW NORMAL HW	A		4,060K	3	12.180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8) VA SMMTT EPM	A		3,939K	5	19.693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.9) SSGN SMMTT HW(†)	A		-	-	2.100	6,050K	2	12.100	-	-	-	-	-	-	-	-	-	-	-	-
5.10) SSGN SMMTT SW MODS	A		-	-	-	-	-	-	-	-	2.750	-	-	-	-	-	-	-	-	-
5.11) SMMTT TECH SUPPORT (12)	A		-	-	42.244	-	-	3.531	-	-	6.278	-	-	2.484	-	-	-	-	-	2.484
5.12) SENSOR SIMULATION(†)	A		-	-	3.436	5,222K	1	5.222	-	-	3.220	-	-	-	-	-	-	-	-	-
Subtotal: 5) TD 500 ATTACK CENTER TRAINERS			**-**	**-**	***125.607***	**-**	**-**	***28.443***	**-**	**-**	***27.976***	**-**	**-**	***28.721***	**-**	**-**	**-**	**-**	**-**	***28.721***
Total			**-**	**-**	**287.891**	**-**	**-**	**48.046**	**-**	**-**	**57.059**	**-**	**-**	**58.041**	**-**	**-**	**-**	**-**	**-**	**58.041**

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) 1.1 High Risk Trainers - Procures two MRTS 3D trainers beginning in FY2021; VA Class Hull Mechanical Electrical Training devices including integrated low-pressure electrolyzer and VA Class Block IV Torpedo Room. This line combines all High Risk Training efforts (1.2 Firefighting Trainer, 1.3 VA Class HME Norfolk) beginning in FY2021.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	**Aggregated Items Title:** Submarine Training

(2) 1.4 Submarine Training Devices - FY2021 procures hydraulic components for the Submarine Hydraulics Maintenance course and Multi-Reconfigurable Training System software engineering to support Fairbanks Morse Diesel Advanced Scenarios as required by the Fleet Diesel Red Team.

(3) 1.5 Ship Control Trainers - This line combines all Ship Control Training efforts including 1.6 SCOT MODS and 1.7 VSCOT MODS starting in FY2021. Procures two 688i Motion System tech refreshes.

(4) 2.1 FIDE - procures training laboratories and training devices required to support FIDE training. Includes site survey, site preparation, modernization and trainer delivery for S6G, S8G, S9G, A4W, A1B and CVN77 Nuclear Power Operator Trainers for FIDEs.

(5) 2.2 VIDE procures training laboratories and training devices required to support FIDE/VIDE training. Includes site survey, site preparation, modernization and trainer delivery for S6G, S8G, S9G, A4W, A1B and CVN77 Nuclear Power Operator Trainers for VIDEs.

(6) 3.1 Navigation Safety of Ship Trainers- this line combines all navigation training efforts (3.2 SBT/ISPAN) and procures the complete Navigation Safety of Ship Trainers consisting of control and server rooms. This procurement improves projector fidelity and reliability to extend trainer lifespan.

(7) 3.2 SSBN Safety of Ship Trainers - FY2021 adds funding to provide Navigation Safety of Ship trainers for the SSBN Homeports at a quantity of two trainers at a total cost of 4,641K. This is a new requirement that was established from the comprehensive review in FY2018 as a result of two Naval Warships colliding with merchants at sea resulting in damage to government property and 17 casualties at sea. SSBN trainers cost less per kit than 688/VA kits.

(8) 3.5 ENGINEERING SUPPORT- This line procures two Submarine Navigation Display equipment suites and associated computer hardware and software. VMS 9.5 will be procured and included in all Navigation trainers. VESUB will be tech refreshed for headsets and graphics computers. Consolidates VMS, VESUB and NAVIGATION TRAINER UPDATES lines in FY2021. Procurement directly supports Comprehensive Review Navigation Trainer Requirements.

(9) 4.1 Fleet Responsive Team Trainers - this line combines all Combat Control and Acoustic Training efforts (4.2 SET and 4.3 COAET Modifications) and will provide individual and watch team training on a lower fidelity training device than the Submarine Attack Centers. Trainers include Common Operation Acoustic Employment Trainers (COAET), Sonar Employment Trainers (SET) and other related virtualized training devices.

(10) 5.1 Submarine Attack Centers- This line combines all submarine attack center modernization related efforts (5.3 SSBN SMMTT, 5.4 SSN SMMTT Tailored 2/4 Model, 5.6 VA SMMTT New Normal HW, 5.7 VA SMMTT New Normal SW MODS, 5.9 SSGN SMMTT HW, 5.10 SSGN SMMTT SW MODS) in FY2021 to include all procurements related to TI/APB modernization hardware and software for SSN/SSBN/SSGN submarine attack centers. One attack center per quarter will be assembled and delivered per the fleet modernization plan. These deliveries will include updates to match trainer configuration with fleet configuration to enable new capabilities for VA CLASS submarines and will provide 688 Class Submarines with modernized attack center capabilities during crew and pre-deployment certifications ashore.

(11) 5.2 SSBN, SSGN, SSN EPM - this line combines all Engineering Production Models (EPMs) (5.5 SSN SMMTT EPM and 5.8 VA SMMTT EPM) required for Submarine Attack Center hardware and software integration and testing.

(12) 5.11 SMMTT TECH Support- Funding decreases in FY2021 due to efficiencies realized through server virtualization and sun setting of legacy acoustic simulation tools. Requires less labor and engineering support.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods	Aggregated Items: Submarine Training

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) TD 100 HM&E TRAINERS												
1.1) HIGH RISK TRAINERS (1)		2021	NAWC TSD / Orlando, FL	Various	** NO PCO **	Oct 2020	Jul 2021	2	855,500.00	Y		Jan 2019
1.2) FIREFIGHTING TRAINER		2019	ELECTRIC BOAT / NEW LONDON	C / TBD	** NO PCO **	Oct 2018	Apr 2020	1	2,738K	N	Oct 2020	
1.3) VA CLASS HME Norfolk		2020	NAWC TSD / Orlando, FL	C / CPFF	NAWC	Jan 2020	Jan 2021	2	838,500.00	N	Dec 2021	Jul 2019
1.5) SHIP CONTROL TRAINERS (3)		2021	ELECTRIC BOAT / NEW LONDON	C / TBD	** NO PCO **	Oct 2020	Apr 2022	2	1,092K	N	Oct 2020	
2) TD200 ENGINEERING TRAINERS												
2.1) FIDE (4)		2021	NUWC NPT / NEWPORT, RI/CD	Various	** NO PCO **	Oct 2020	Apr 2022	1	3,538K	Y		Jan 2020
2.2) VIDE (5)		2021	ELECTRIC BOAT / NEW LONDON	C / TBD	** NO PCO **	Oct 2020	Apr 2022	1	1,786K	N	Oct 2020	
3) TD 300 NAVIGATION TRAINERS												
3.1) NAVIGATION SAFETY OF SHIP TRAINERS (6)		2021	NUWC NPT / NEWPORT, RI/CD	Various	** NO PCO **	Oct 2020	Apr 2022	2	3,662K	Y		Jan 2020
3.2) SSBN SAFETY OF SHIP TRAINERS (7)		2021	NUWC NPT / NEWPORT, RI/CD	Various	** NO PCO **	Oct 2020	Apr 2022	2	2,302K	Y		Jan 2020
3.3) SBT/ISPAN		2019	NUWC NPT / NEWPORT, RI/CD	C / TBD	** NO PCO **	Oct 2018	Apr 2020	1	1,846K	N	Oct 2018	
3.3) SBT/ISPAN		2020	NUWC NPT / NEWPORT, RI/CD	C / TBD	** NO PCO **	Oct 2019	Apr 2021	2	3,590K	N		
3.5) ENGINEERING SUPPORT (8)		2021	NUWC NPT / NEWPORT, RI/CD	Various	** NO PCO **	Oct 2020	Apr 2022	2	847,500.00	N	Oct 2020	
4) TD 400 COMBAT CONTROL ACOUSTIC TRAINERS												
4.1) FLEET RESPONSIVE TEAM TRAINERS (9)		2021	NUWC NPT / NEWPORT, RI	Various	** NO PCO **	Oct 2020	Apr 2022	4	1,220K	Y		Jan 2020
4.2) SET		2019	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Oct 2018	Apr 2020	1	1,332K	N		
4.2) SET		2020	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Oct 2019	Apr 2021	1	1,356K	N		
5) TD 500 ATTACK CENTER TRAINERS												
5.1) SUBMARINE ATTACK CENTERS (10)		2021	NUWC NPT / NEWPORT, RI	Various	** NO PCO **	Oct 2020	Jun 2021	4	5,673K	Y		Jan 2020
5.2) SSBN, SSGN, SSN EPM (11)		2021	NUWC NPT / NEWPORT, RI	Various	** NO PCO **	Oct 2020	Apr 2022	1	3,545K	Y		Jan 2020
5.4) SSN SMMTT TAILORED 2/4 MODEL		2020	Lockheed Martin / Bethesda MD	C / TBD	** NO PCO **	Jan 2020	Oct 2020	1	8,000K	N	Dec 2020	
5.5) SSN SMMTT EPM		2019	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Oct 2018	Apr 2020	1	3,414K	Y		Jan 2018
5.5) SSN SMMTT EPM		2020	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Oct 2019	Apr 2021	1	3,475K	Y		Jun 2019
5.9) SSGN SMMTT HW		2019	NSWC CD / BETHESDA, MD	C / TBD	NSWC CD	Oct 2018	Oct 2019	2	6,050K	Y		Jun 2017
5.12) SENSOR SIMULATION		2019	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Nov 2018	May 2020	1	5,222K	N		

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	**Aggregated Items:** Submarine Training

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	**Modification Number / Title:** 1 / Submarine Attack Center 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)*	151.150	8.788	10.170	11.199	0.000	11.199	11.529	11.650	11.676	11.910	1.624	229.696
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	151.150	8.788	10.170	11.199	0.000	11.199	11.529	11.650	11.676	11.910	1.624	229.696
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**151.150**	**8.788**	**10.170**	**11.199**	**0.000**	**11.199**	**11.529**	**11.650**	**11.676**	**11.910**	**1.624**	**229.696**
(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:
Submarine Attack Center Modifications line upgrades hardware, software and simulation to match current Fleet configurations.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	**Modification Number / Title:** 1 / Submarine Attack Center Modifications
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Submarine Attack Center Modifications supporting SMMTT procurements and deliveries.	**Modification Type:** TBD	**Related RDT&E PEs:** 0604558N

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: Submarine Attack Center Modifications												
B Kits												
Recurring												
1.1.1) Submarine Attack Center Modifications - NonOrganic	42 / 146.099	6 / 8.028	3 / 9.395	4 / 10.411	- / -	4 / 10.411	4 / 10.725	4 / 10.830	4 / 10.840	4 / 11.057	- / -	71 / 217.385
Subtotal: Recurring	*- / 146.099*	*- / 8.028*	*- / 9.395*	*- / 10.411*	*- / -*	*- / 10.411*	*- / 10.725*	*- / 10.830*	*- / 10.840*	*- / 11.057*	*- / 0.000*	*- / 217.385*
Subtotal: Submarine Attack Center Modifications	*42 / 146.099*	*6 / 8.028*	*3 / 9.395*	*4 / 10.411*	*- / -*	*4 / 10.411*	*4 / 10.725*	*4 / 10.830*	*4 / 10.840*	*4 / 11.057*	*- / -*	*71 / 217.385*
Subtotal: Procurement, All Modification Items	*- / 146.099*	*- / 8.028*	*- / 9.395*	*- / 10.411*	*- / -*	*- / 10.411*	*- / 10.725*	*- / 10.830*	*- / 10.840*	*- / 11.057*	*- / 0.000*	*- / 217.385*
Installation												
Modification Item 1 of 1: Submarine Attack Center Modifications	- / 5.051	- / 0.760	- / 0.775	- / 0.788	- / 0.000	- / 0.788	- / 0.804	- / 0.820	- / 0.836	- / 0.853	- / 1.624	- / 12.311
Subtotal: Installation	*- / 5.051*	*- / 0.760*	*- / 0.775*	*- / 0.788*	*- / -*	*- / 0.788*	*- / 0.804*	*- / 0.820*	*- / 0.836*	*- / 0.853*	*- / 1.624*	*- / 12.311*
Total												
Total Cost (Procurement + Support + Installation)	**151.150**	**8.788**	**10.170**	**11.199**	**0.000**	**11.199**	**11.529**	**11.650**	**11.676**	**11.910**	**1.624**	**229.696**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	**Modification Number / Title:** 1 / Submarine Attack Center Modifications

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

Modification Item 1 of 1: Submarine Attack Center Modifications

Manufacturer Information

Manufacturer Name: NSWC CD/NUWC NPT [13] Manufacturer Location: BETHESDA, MD/ NEWPORT, RI

Administrative Leadtime *(in Months)*: 6 Production Leadtime *(in Months)*: 17

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

Installation Information

Method of Implementation: AIT:: Installation Name: Submarine Attack Center 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	38 / 5.051	2 / 0.760	2 / 0.387	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	42 / 6.198
FY 2019	- / -	- / -	3 / 0.388	3 / 0.390	0 / 0.000	3 / 0.390	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.778
FY 2020	- / -	- / -	- / -	1 / 0.398	0 / 0.000	1 / 0.398	2 / 0.536	- / -	- / -	- / -	0 / 0.000	3 / 0.934
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.268	3 / 0.615	- / -	- / -	0 / 0.000	4 / 0.883
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.205	3 / 0.627	- / -	0 / 0.000	4 / 0.832
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.209	3 / 0.644	0 / 0.000	4 / 0.853
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.209	3 / 0.754	4 / 0.963
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.870	4 / 0.870
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	38 / 5.051	2 / 0.760	5 / 0.775	4 / 0.788	0 / 0.000	4 / 0.788	3 / 0.804	4 / 0.820	4 / 0.836	4 / 0.853	7 / 1.624	71 / 12.311

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	38	-	-	1	1	-	-	3	2	-	3	-	1	-	2	-	1	1	1	1	1	1	1	1	1	1	1	1	1	7	71
Out	38	-	-	-	2	-	-	-	5	-	3	-	1	-	2	-	1	1	1	1	1	1	1	1	1	1	1	1	1	7	71

Footnotes:

[13] NSWC CD & NUWC NPT are collaborating warfare centers that manage and execute the SMMTT as directed by NAVSEA. Both warfare centers function as a prime for this effort. However, for cost efficiency purposes, they compete their cognizant tasks among multiple vendors with multiple orders to provide equipment/software in a timely manner to meet the fleet required training dates. As such, the SMMTT delivery is not linked to any single contract date.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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)*	164.710	206.771	222.647	192.245	0.000	192.245	127.750	82.620	84.851	77.518	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	164.710	206.771	222.647	192.245	0.000	192.245	127.750	82.620	84.851	77.518	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**164.710**	**206.771**	**222.647**	**192.245**	**0.000**	**192.245**	**127.750**	**82.620**	**84.851**	**77.518**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	0.108	1.276	0.838	-	0.838	0.623	0.781	0.837	0.854	Continuing	Continuing
Flyaway Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Dollars)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This line provides funding to procure, modify, and upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and Fleet training requirements as dictated by the Surface and Expeditionary Warfare Training Plan.

[P40A / SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS]: STAVE-LCS SEAFRAME SIMULATORS - Funds procure Littoral Combat Ship (LCS) tactical training simulators and equipment for the respective LCS homeports and the Surface Warfare Officer School (SWOS) in Newport, Rhode Island. Simulators meet the Train to Qualify/ Train to Certify (T2Q/T2C) Key Performance Parameter (KPP) requirement of the Capabilities Development Document. Funding procures hardware and software associated with building the trainers and the installation of this hardware and software at the LCS Training Facilities (LTF) in each homeport and at SWOS enabling the increased throughput for ships/crew/sailors supporting CNO approved BLUE GOLD Plus crewing strategy and directly supporting the revised training requirements of the Navy's Comprehensive Review. This procurement enables ship Commanding Officers to witness watch stander crew performance under high-stress conditions given realistic at sea scenarios in the synthetic environment. Trainers are required for each ship variant, located in the San Diego and Mayport homeports and at SWOS. Throughput of LCS crews requires more than one simulator of each variant in a homeport.

1.1) STAVE-LCS Virtual Reality Labs & Networks and Modernization - Funds comprehensive network infrastructure and computing environment and Virtual Reality Labs (VRLs), within the LCS Training Facilities (LTF) to support delivery and management of all components of LCS watch stander training. This modernization enables enhanced warfighter scenario training for the LCS crews in Combat Systems qualifications and ship systems troubleshooting, through the virtual network, without which, no systems within the LTF (currently built in San Diego, and being built in Mayport) will interoperate or communicate with each other. Both LTFs are being designed around a central computer server farm (backbone) that houses all courseware, training scenarios, and student records. Without the STAVE-Net infrastructure, there is no way to distribute the required courseware and software around the LTF. Without the VRLs, there is no method of presenting previously developed STAVE courseware to students. Modernization efforts include regular/scheduled updates/upgrades to the STAVE Network and include procurement of new servers, relays, and switches, along with the procurement of replacement Virtual Reality Lab (electronic classroom) equipment supporting increased crew throughput.

1.2) STAVE-LCS Mission Bay Trainers & Modernization - Enable the qualification, training, and team certification of the individuals and teams deploying the LCS main battery - Mission Packages (MP). Live scenarios include prepping and launching/recovering of multi-ton mission module off-hull remote vehicles and operating of the internal cranes, doors, and other associated equipment in the Mission Bay. Modernizations provide updated MP deployment and recovery capability for enhanced warfighting readiness the individual full-scale replicas of the Mission Bay for both variants. Without the Mission Bay Trainer, there will be no realistic controlled scenario homeport training in the Mission Bay operations for the San Diego or Mayport-based crews and detachments during training pipeline, or off-hull, rapid refresh crew team training, and the primary warfare area (the Mission Bay) for the LCS ships will have no shore-based, controlled training capability in San Diego and Mayport, in this high-risk area of Mission Bay 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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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		

1.3) STAVE-LCS Integrated Tactical Trainers & ITT Modernization - These are full scale simulators of the Tactical Software enabling, initial and proficiency, integrated team training of Bridge, Combat Systems, Engineering, and Mission Package systems/watch stations. The ITT delivers Detect to Engage sequencing of ships Combat Systems and developing watch stander Command and Control for our future Navy warfighters. The quantity and type (based on variant) of trainers in San Diego and Mayport is dependent on the Navy's Strategic Laydown of the Littoral Combat Ships. Follow on ITT procurements will include integrated crew served weapon simulators (discussed below). Modernization to the ITT's enable ships baseline upgrades and realistic combat scenarios compatible with individual crew Combat System baseline to prepare crews for in Battle Force training. Without the ITTs, there is no way for the LCS crews and detachments to train in-port, as the LCS ships do not have an onboard training system requirement. Ships would have to train underway utilizing real targets and other Fleet assets, such as drones, and commercial air services to accomplish required qualifications and certifications for all of their training. The LCS Concept of Operations does not support such at-sea intensive training requirements.

1.4) STAVE-LCS Integrated Tactical Trainers / Combat & Engineering Systems: Procurement of Maintenance Execution Team (MET) devices, and procurement installation of 7/11 Rigid Hull Inflatable Boat (RHIB) simulation systems.

1.5) STAVE-LCS Integrated Tactics Trainer Complete System - Procurement of the complete trainer to include Bridge Training System, Combats Training System and Engineering Training System.

1.6) STAVE-LCS Bridge Trainers and Modernization - Devices that permit selected aspects of Bridge tasks (including Readiness Control Officer [RCO] tasks) to be practiced independently of Combat Systems Operations as found in more capable ITTs. This facilitates more efficient accomplishment of T2Q and T2C objectives. This trainer supports Officer training pipeline at SWOS, Newport in support of Division Officer, Department Head, and PXO/PCO training pipeline for Officer of the Deck Training and rapid refresh and skills enhancement in Mayport.

1.7) STAVE-LCS Tactical Action Officer Trainers Modernization - Modernization efforts include upgrades to the trainers through procurement of new servers, relays and switches as well as new consoles, joysticks and communication equipment.

1.8) STAVE-LCS Combat Systems Part Task Trainers (C2 PTT) (LCS 1 and LCS 2) . These devices permit training in selected aspects of Combat Systems Operations that are found in the more capable ITTs, to support individual skills development and practice, reduce the wear and tear on the ITTs, and allow the ITTs to more efficiently accommodate team training and certifications.

[P40A / STAVE-LCS Integrated Tactical Trainers / Combats & Engineering Systems]: STAVE-LCS Integrated Tactical Trainers / Combat & Engineering Systems: Procurement of Maintenance Execution Team (MET) devices, and procurement and installation of 7/11M Rigid Hull Inflatable Boat (RHIB) simulation systems.

[P40A / Combined IAMD/ASW Trainer (CIAT) to Sea]: Investment provides updates to the Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT) to establish a foundation for bringing this capability to AEGIS and Anti-Submarine Warfare (ASW) Baselines for ship integration to provide live, virtual, constructive (LVC) training in a contested environment. Investment will enable 27 additional platforms to train to their ships capabilities in realistic environments against peer/near peer threats. This will provide high fidelity LVC capability at sea and enables needed training capability for Sailors to employ the weapon system against peer threats during AWT Phase II, and enables AEGIS Training and Readiness Command, as part of a larger strategy, to meet training production for Fire Controlman, Sonarman and Officers.
Funds also include costs associated with tactical and other software licensing, Information Assurance, computer program procurements and patches to ensure alignment with DON CIO Cyber requirements and ship tactical modernization. ($39.6M in FY20)

[P40A / MB040 - Fleet Training Wholeness Strike Group CEC Training at Sea]: Investment modifies Cooperative Engagement Capability (CEC) to include Naval Integrated Fire Control-Counter Air (NIFC-CA) Increment II capabilities to meet Strike Group Training Requirements by providing an at sea training capability for ~130 Aegis/SSDS ships.

[P40A / MB040 - Surface Advanced Virtual Environment (STAVE)]: Funding issued for the procurement, delivery, installation and sustainment of distributed STAVE-CS hardware suites for maintainer training, procures STAVE-CS virtual operator labs, supporting over 10,000 students over the FYDP. Aggressive Fleet expansion and modernization plans for both Aegis, SSDS and SQQ-89 along with service life extension of the Fleet requires advanced distributed (via NCTE) training solutions to support increased throughput on complex concepts and capability. ($27.87M in FY20)

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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 / CVN 78 Class Training Equipment]: This provides for several initiatives oriented to developing training solutions for multiple mission critical CVN 78 contractor furnished equipment (CFE) systems. Funds procure CVN 78 Class training simulators and equipment for the Carrier Advanced Reconfigurable Training System (C-ARTS) to achieve Ready For Training (RFT). In particular, the CFE items procured include: multiple training simulators, ship system mock-ups, electronic classrooms, intelligent tutoring systems, and use of Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) training content necessary for installation at the C-ARTS training facilities. Simulators are needed to meet warfighter mission and safety readiness requirements of the Naval Aviation Carrier Training Manual. Funding procures hardware and software associated with building the trainers' hardware and software for future installation at the applicable C-ARTS sites and Centers of Excellence in Norfolk, Great Lakes, and at SWOS Newport as designed. This funding represents initial training systems procurement for Advanced Weapons Elevator (AWE), Machinery Control and Monitoring System (MCMS), MCMS On Board Trainers (OBT), Honeywell valve actuators, Solid State Voltage & Frequency Converter (SSVFC), Aqueous Film Forming Foam (AFFF) System, video network, Voice Telephone System (VTS), Zonal Electrical Distribution System (ZEDS), Oxygen (O2) Systems, Plasma Arc Waste Destruction System (PAWDS), Steering Gear Control System (SGCS), Fiber Optics Cable Plant (FOCP). The Formal Life Cycle Training program provides training delivery for effective warfighter skills required for safe operations and maintenance of the ship. There is no schoolhouse established for any of these new CFE systems being introduced on the CVN 78.

[P40A / SSC Full Mission Trainers]: Funds Ship to Shore Connector (SSC) Full Mission Trainers (FMT) which is a programmable simulator and is a fundamental element of SSC operator training. New SSC FMTs are required because LCAC FMTs will not support SSC crew training based on significant Command Module/C4N System differences. Note: This item was previously housed in LI 0970 and was moved to LI 5664.

[P5 / TS004 Surface Training Device Mods]: This line provides funds to procure, modify and upgrade trainers to include Aegis Weapon Systems, Aegis Ashore, Littoral Combat Ship (LCS), DDG 1000, shore based Integrated Navigation, Seamanship and Shiphandling Trainers (I-NSST), Ship Self Defense System (SSDS), AN/SQQ-89A(V)15 Anti-Submarine Warfare (ASW) Tactical Employment Trainer (ATET), North Atlantic Treaty Organization SEASPARROW Surface Missile Systems (NSSMS), and other Surface Warfare related individual and team Training Programs to include Navigation, Hull, Mechanical and Electrical (HM&E), combat systems (CS), and Amphibious and Mine Warfare (AMW) Technical Training Equipment (TTE), Training Devices, Training Unique Equipment, Training systems, and the Surface Training Advanced Virtual Environment (STAVE). STAVE methodology provides students with an immersive and interactive learning environment as well as hands-on training equipment as part of a blended solution, which accelerates learning, improves student performance, and supports both Department of the Navy (DON) High Velocity Learning and Ready Relevant Learning intent. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and fleet training requirements as dictated by the Surface and Expeditionary Warfare Training Plan (SEWTP). Additionally, funds support the creation of training system's critical design review (CDR) packages as well as the establishment and improvement of ship on-board training curriculum for the purpose of maintaining perishable operator and maintenance skills.

[P5 / Navigation Trainers]: Funds are provided for modifications/upgrades to shore based Navigation Trainers in support of the Surface Warfare Mariner Skills Training Program (MSTP).

[P5 / AEGIS Ashore Trainer/C4I/Tech Refresh]: Funds modernization, delivery, installation and life-cycle maintenance support of the high fidelity Aegis Ashore Team Trainer in support of the land-based Aegis Ashore Training Continuum that is aligned to the training system for Navy Sailors who will man European Phased Adaptive Approach (EPAA) land-based Ballistic Missile Defense (BMD) facilities in Poland and Romania. The Aegis Ashore Team Trainer (AATT) at Dam Neck, VA is the single site for individual watch team tactical training, certification events, and sustainment training for Aegis Ashore rotational crews assigned to AA BMD Host Nation Sites. Funds also provide for the integration of C4I components, BMD Upgrades, and tech refresh.

[P5 / Combined IAMD/ASW Trainer (CIAT)]: Combined Integrated Air and Missile Defense (IAMD)/Anti-submarine Warfare (ASW) Trainer (CIAT): From the Aegis Weapon System/SPY Radar Readiness Task Force, Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Naval Integrated Fire Control-Counter Air (NIFC-CA), and C5I training requirements documents, one of the areas identified for long term investment was to meet the requirement for a high fidelity IAMD and ASW training capability. Due to the cost and operations prohibitive realities associated with modifying onboard training systems, which currently meet only 60% of the DON requirement for ship training systems to be commensurate with tactical system capability, this shore-based, high fidelity trainer is being procured and installed to emulate most current Aegis Weapon System (AWS) configurations. The CIAT High Fidelity trainer includes all necessary tactical IAMD, ASW and Electronic Warfare (EW) systems, associated hardware and work stations, the simulation and stimulation software and network hardware, training brief/debrief capabilities and instructor operating control system. Due to the complexity and size of the system being procured, a spiral procurement and installation process will be utilized and executed in stages to maximize training capabilities that align with Fleet requirements. The CIAT will field in the Fleet Concentration Areas of San Diego and Norfolk in support of Warfare Tactics Instructor and Surface Warfare Advanced Tactical training to include program of record Phase II, Advanced Warfare Training (AWT). Funds also include costs associated with tactical and other software licensing, Information Assurance, computer program procurements and patches to ensure alignment with DON CIO Cyber requirements and ship tactical modernization.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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		

[P5 / Navy Training System Plan (NTSP TTE/TD Mods)]: Funds procurement, installation, and upgrades for surface and expeditionary training systems in multiple Fleet Concentration Areas (FCA) in accordance with the results of DON directed and Fleet sponsored studies, NTSP updates, and Technical Training Audits from 2011 through 2017. One of the key items identified in the Fleet Review Panel of Surface Force Readiness, LPD 17 Class Wholeness Task Force, Navigation Wholeness Study, Surface Engineering Training Wholeness Review, Littoral Combat Ship (LCS) Front End Analysis (FEA), DDG 1000 wholeness review, and LHD 8/ LHA 6 MPT analyses done by the Surface Warfare Enterprise was the outdated, or lack of, training equipment in the schoolhouses. Based on this analysis, funding supports requirements identified in approximately 80 Navy Training System Plan updates and 162
Technical Training Course Audits. This investment will be for the procurement and installation of Training Equipment at Learning Centers to keep training courses in alignment with current configuration of equipment in the fleet.
Investment ensures Surface Warfare Training Continuums are capable of meeting training requirements directly supporting readiness for systems/courses, including the following:

1. Magazine Sprinkler Systems Operations and Maintenance
2. Air Cooled Frequency Converter Maintenance
3. Controls and Governors Regulators
4. Advanced Welding
5. Habitability Auxiliaries (Mechanical)
6. Habitability Auxiliaries (Electrical)
7. Hydraulic Systems
8. Combat Systems (CS) A School
9. Galley Watch Captain
10. Laundry Systems Maintenance
11. Hydraulics Systems
12. Galley Supervisor

[P5 / Technical Training Equipment Modifications]: Funds schoolhouse modifications, upgrades, and technology refreshes of end items in support of fleet training requirements including Hull Mechanical and Electrical (HM&E), and combat systems technical training equipment (TTE) for the training activities. Provides equipment to augment existing TTE due to increased student throughput, replaces equipment beyond economical repair and procures new equipment.

[P5 / DDG & CG BMD 4.X/HM&E Modernization Training]: Cruiser and Destroyer modernization and new construction delivers new Hull Mechanical and Electrical (HM&E) systems. This line funds HM&E training equipment for the schoolhouses to train approximately 1,500 students over the FYDP. Without this equipment, the Navy cannot train Sailors and Officers to operate and maintain the new HM&E systems. There is no Ready Relevant Learning (RRL) solution able to substitute for these training requirements.

[P5 / NATO SEASPARROW Surface Missile System (NSSMS) Schoolhouse Trainer]: This line funds the procurement and installation of MK57 Mod 12/15 NATO Sea Sparrow Missile System (NSSMS) training and technical equipment in the schoolhouse. The MK57 Mod 12/15 NSSMS training and technical equipment will ensure that sailors are properly trained on how to operate and maintain the current MK57 Mod 12/15 NSSMS.

[P5 / SURFACE MINOR MODS]: Funds modernization for training systems for over 200 surface and expeditionary training systems in accordance with the results of DON directed and Fleet sponsored studies from 2009 through 2016. Specific studies of surface training systems include: Fleet Review Panel of Surface Force Readiness, Aegis Weapon System/SPY Radar Readiness Task Force, LPD 17 Class Wholeness Task Force, Navigation Wholeness Study, Surface Engineering Training Wholeness Review, Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Aegis Ashore, Naval Integrated Fire Control-Counter Air (NIFCCA) and C5I training requirements documents, Littoral Combat Ship (LCS) Front End Analysis (FEA), DDG 1000 wholeness review, LHD 8/ LHA 6 Front End Analysis (FEA), Commander Naval Surface Forces (CNSF) manpower initiatives impact on readiness, and the Navy Inspector General (IG) report on Computer Based Training (CBT). Surface Training Readiness Management Systems (STRMS) - procurement of hardware/software and implementation of the tracking system and incremental scaling/modification of each mission area competency, proficiency and associated Training and Readiness (T&R) metric for comparison to Fleet requirements across all Cruiser/Destroyer (CRUDES) baselines. The extensive inventory of training systems to support 16 classes

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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		

of ships requires continual modernization and modification to ensure alignment with fleet systems while addressing technology obsolescence issues. Funding is budgeted to modernize systems including the following:

1. Damage Control Wet Trainers Upgrades/Refresh
2. DDG 51 Machinery Control System Maintenance Trainer
3. Electrical Maintenance Training
4. Air Conditioning and Refrigeration (AC&R) Maintenance Training
5. Deck System Equipment Training
6. Marine Sanitation Devices
7. Landing Craft Air Cushion (LCAC)/SSC Team Trainer Overhaul/Upgrades
8. Firefighting Team Trainers Upgrades/Refresh
9. Advanced Electronic Attack (EA)
10. Anti-Submarine Warfare (ASW) Tactical Trainers to include ASW Tactical Employment Trainer (ATET).
11. Elevator Systems
12. Steam Maintenance Training
13. DDG 1000 Training Systems
14. Expeditionary Mobile Base (ESB) Training Systems
15. Landing Craft Utility (LCU) 1600/1700 Training Systems
16. Air Defense Strike Group Facility (ADSGF)/Integrated Training Facility (ITF) (Fallon, NV)
17. LCS Training Systems
18. Surface Training Readiness Management Systems (STRMS)

[P5 / FFT/SLEP/MODULAR TRAINER]: Funds are provided for the SLEP FFT. Trainers are located in Newport, Norfolk, Mayport, San Diego, Pearl Harbor, and Great Lakes, and are vital to ensuring the fleet's ability to utilize and employ shipboard systems.

[P5 / FCA TRAINERS]: Fleet Concentration Areas (FCA) TRAINERS - Funds are provided for upgrades to shore based trainers (Combat System, HM&E) in Fleet Concentration Areas.

[P3A / MB040 - BFTT SHIP SETS]: Battle Force Tactical Training (BFTT) T46D Ship set configurations vary depending on AEGIS or Ship Self Defense System (SSDS) installation. T46D's for SSDS include additional materials and units to be integrated for stimulation of the ships sensors.

[P3A - 2 / MB040 BFTT UPGRADE KITS]: Upgrade Kits and interface upgrades implement Fleet prioritized warfighting training improvements to the Total Ship Training Capability (TSTC)/Battle Force Tactical Training (BFTT) systems in order to meet evolving combat system capabilities. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Unit costs are variable.

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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	Other Ships Training Equipment	P-5a, P-21			- / 56.768	- / 79.366	- / 106.672	- / 96.368	- / -	- / 96.368
P-5	1 / TS004 Surface Training Device Mods [TS004]				- / 69.506	- / 103.002	- / 90.875	- / 68.010	- / 0.000	- / 68.010
P-3a	1 / MB040 - BFTT SHIP SETS (TBD)				- / 19.639	- / 19.555	- / 18.070	- / 18.150	- / 0.000	- / 18.150
P-3a	2 / MB040 BFTT UPGRADE KITS (TBD)				- / 18.797	- / 4.848	- / 7.030	- / 9.717	- / 0.000	- / 9.717
P-40	**Total Gross/Weapon System Cost**				**- / 164.710**	**- / 206.771**	**- / 222.647**	**- / 192.245**	**- / 0.000**	**- / 192.245**

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	Other Ships Training Equipment	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-5	1 / TS004 Surface Training Device Mods [TS004]				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / MB040 - BFTT SHIP SETS (TBD)				- / 16.565	- / 15.050	- / 15.050	- / 20.050	Continuing	Continuing
P-3a	2 / MB040 BFTT UPGRADE KITS (TBD)				- / 12.360	- / 14.310	- / 14.450	- / 17.769	- / 0.000	- / 99.281
P-40	**Total Gross/Weapon System Cost**				**- / 127.750**	**- / 82.620**	**- / 84.851**	**- / 77.518**	**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 funding request for the Surface Training Advanced Virtual Environment (STAVE) Seaframe Simulators reflects modernization, and upgrades to existing ITTs, Bridge Part Task Trainers (BPTTs), and Virtual Reality Laboratories (VRLs).

The FY21 increase in funding growth for BFTT supports the delivery and sustainment of distributed STAVE-CS hardware suites for maintaining training for over 10,000 students and Cooperative Engagement Capability (CEC) hardware for Naval Integrated Fire Control-Counter Air (NIFC-CA) capabilities to meet Strike Group Training Requirements, and delivery capability to enable at sea training. Increased FY 2021 funding in the amount of $12.35M for Surface Training Advanced Virtual Environment (STAVE) infrastructure for the procurement of maintenance and operator training equipment, materials, and visuals for operation. This requirement will provide increased student throughput, and gain efficiencies by enabling courses to be centrally conducted and distributed to remote classrooms located in fleet concentration areas. Combined IAMD/ASW Trainer (CIAT) to Sea decrease of $15.5M from FY20 to FY21 is in accordance with the budget requested for STAVE-CS. FY20 funding is for the procurement of trainers and classroom infrastructure upgrade materials. The reduced amount of FY21 funding is for the installation of these trainers and class room infrastructure upgrades.

The phasing of the CVN 78 Class training equipment is based on achieving Ready for Training (RFT) dates for various shipboard systems based on system complexity and procurement lead times, which is aligned to the CVN 78 deployment ready status and the INITIAL training requirements of the CVN 79 Crew.

FY21 funding for Surface Training Device Modifications decreased by $21.924M in accordance with Surface and Expeditionary Warfare Training Plan (SEWTP) requirements planned for the fiscal year. This program provides funding to procure, modify, and upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and Fleet training requirements as dictated by the SEWTP. Funding decreased in FY21 due to the fact that significant investments were made in FY20 for Navigation, Seamanship, and Ship-handling Trainers (NSST), and fewer procurements are planned for FY21 ($-11.7M). Funding also decreased in response to the number of formal courses of

Exhibit P-40, Budget Line Item Justification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance	**P-1 Line Item Number / Title:** 5664 / Surface Training 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		

instruction that will require NTSP updates during the fiscal year ($-8.5M), as well as the planned completion of the DDG & CG HM&E Modernization Training effort ($-8.9M). While overall program funding decreased for Surface Training Device Modifications, FY21 funding increased for the following efforts, in order to support Fleet readiness and ensure that sailors are properly trained to operate and maintain mission critical systems and effectively execute their missions: 1) Surface Minor Modifications - FY21 funding is required to support an increase in SEWTP requirements including funding for Surface Training Readiness Management Systems (STRMS) ($6.512M); and 2) Service Life Extension Program (SLEP) Firefighter Trainer (FFT) - FY21 funding is required as Firefighter Trainers are reaching the end of their life expectancy and more extensive SLEP tasks are needed to extend the life expectancy of the trainers to support the fleet ($0.7M).

SHIP TO SHORE CONNECTOR (SSC) FULL MISSION TRAINERS (FMT) - Program has requirements for two FMTs, which are programmable simulators and is a fundamental element of SSC operator training. New SSC FMTs are required because LCAC FMTs will not support SSC crew training based on significant Command Module/C4N System differences. Note: This item was previously housed in LI 0970 and was moved to LI 5664.

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5664 / Surface Training Equipment	Aggregated Items Title: Other Ships Training 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 ($)	Qty (Each)	Total Cost ($ 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) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS																				
1.1) STAVE-LCS Virtual Reality Labs, Networks & Modernization	A		-	-	4.864	-	-	1.950	-	-	14.194	-	-	1.176	-	-	-	-	-	1.176
1.2) STAVE-LCS Mission Bay Trainers & Modernization	A		-	-	-	-	-	-	-	-	6.397	-	-	-	-	-	-	-	-	-
1.3) STAVE-LCS Integrated Tactics Trainer (ITT) Modernization	A		-	-	7.952	-	-	-	-	-	-	-	-	9.000	-	-	-	-	-	9.000
1.4) STAVE-LCS Integrated Tactical Trainers / Combats & Engineering Systems	A		-	-	22.155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) STAVE-LCS Integrated Tactical Trainer ITT (Complete System)(†)	A		-	-	-	30,028K	2	60.057	-	-	-	-	-	-	-	-	-	-	-	-
1.6) STAVE-LCS Bridge Trainers & Modernization	A		-	-	-	-	-	8.655	-	-	7.898	-	-	1.000	-	-	-	-	-	1.000
1.7) STAVE-LCS Tactical Action Officer Trainers & Modernization	A		-	-	-	-	-	-	-	-	4.000	-	-	1.900	-	-	-	-	-	1.900
1.8) STAVE-LCS Combat Systems Part Task Trainers (C2PTT)	A		-	-	-	-	-	-	-	-	5.300	-	-	-	-	-	-	-	-	-
Subtotal: 1) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS			**-**	**-**	***34.971***	**-**	**-**	***70.662***	**-**	**-**	***37.789***	**-**	**-**	***13.076***	**-**	**-**	**-**	**-**	**-**	***13.076***
2) MB040 - BFTT SHIP SETS																				
2.1) Combined IAMD/ ASW Trainer (CIAT) to Sea (2)	A		-	-	-	-	-	-	-	-	39.600	-	-	24.100	-	-	-	-	-	24.100
2.3) MB040 - Surface Advanced Virtual Environment (STAVE) (3)	A		-	-	-	-	-	-	-	-	27.870	-	-	40.220	-	-	-	-	-	40.220
2.4) MB040 - BFTT SHIP SETS	A		481,545.45	11	5.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) MB040 - BFTT SHIP SETS			**-**	**-**	***5.297***	**-**	**-**	**-**	**-**	**-**	***67.470***	**-**	**-**	***64.320***	**-**	**-**	**-**	**-**	**-**	***64.320***

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Aggregated Items Title:** Other Ships Training 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 ($)	Qty (Each)	Total Cost ($ 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) CVN 78 Class Training Equipment																				
3.1) CVN 78 Class Training Equipment (4)	A		-	-	16.500	-	-	7.942	-	-	1.412	-	-	4.457	-	-	-	-	-	4.457
Subtotal: 3) CVN 78 Class Training Equipment			**-**	**-**	***16.500***	**-**	**-**	***7.942***	**-**	**-**	***1.412***	**-**	**-**	***4.457***	**-**	**-**	**-**	**-**	**-**	***4.457***
4) Ship to Shore Connector Full Mission Trainers																				
4.1) SSC Full Mission Trainers (5)	A		-	-	-	-	-	0.762	-	-	0.001	-	-	14.515	-	-	-	-	-	14.515
Subtotal: 4) Ship to Shore Connector Full Mission Trainers			**-**	**-**	***0.000***	**-**	**-**	***0.762***	**-**	**-**	***0.001***	**-**	**-**	***14.515***	**-**	**-**	**-**	**-**	**-**	***14.515***
Total			**-**	**-**	**56.768**	**-**	**-**	**79.366**	**-**	**-**	**106.672**	**-**	**-**	**96.368**	**-**	**-**	**-**	**-**	**-**	**96.368**

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) Increase in STAVE-LCS integrated Tactical Trainer (ITT) Modernization is driven by an additional modernization requirement for ITT in FY21

(2) The decrease of $15.5M from FY20 to FY21 is in accordance with the budget requested for STAVE-CS. FY20 funding is for the procurement of trainers and classroom infrastructure upgrade materials. Less funding is required in FY21 for the installation of these trainers and class room infrastructure upgrades.

(3) Increased FY 2021 funding in the amount of $12.35M for Surface Training Advanced Virtual Environment (STAVE) infrastructure for the procurement of maintenance and operator training equipment, materials, and visuals for operation. This requirement will provide increased student throughput, and gain efficiencies by enabling courses to be centrally conducted and distributed to remote classrooms located in fleet concentration areas.

(4) CVN 78 Class Training Equipment - FY 21 funding increase is associated with the Technical Training Equipment procurement of the Advanced Aircraft Elevator system for the CVN 79.

(5) SHIP TO SHORE CONNECTOR (SSC) FULL MISSION TRAINERS (FMT) - Program has requirements for two FMTs.

Exhibit P-5a, Procurement History and Planning: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5664 / Surface Training Equipment	Aggregated Items: Other Ships Training Equipment (1)

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) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS												
1.5) STAVE-LCS Integrated Tactical Trainer ITT (Complete System)(†)		2019 (6)	Lockheed Martin / Moorestown, NJ	C / FFP	NAWC TSD	Jun 2019	Jun 2021	2	30,028K	Y		Oct 2018

(†) indicates the presence of a P-21

Footnotes:

(6) 1 ITT award June, 1 ITT award Sept

Exhibit P-21, Production Schedule: PB 2021 Navy		**Date:** February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Aggregated Items:** Other Ships Training Equipment (1)

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) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS																															
1.5) STAVE-LCS Integrated Tactical Trainer ITT (Complete System)																															
	12	2019	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 / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Aggregated Items:** Other Ships Training Equipment (1)

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) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS																															
1.5) STAVE-LCS Integrated Tactical Trainer ITT (Complete System)																															
	12	2019	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 / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Aggregated Items:** Other Ships Training Equipment (1)

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	Lockheed Martin - Moorestown, NJ			TBD	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).

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Item Number / Title [DODIC]:** 1 / TS004 Surface Training Device Mods [TS004]
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)*	69.506	103.002	90.875	68.010	0.000	68.010
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	69.506	103.002	90.875	68.010	0.000	68.010
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**69.506**	**103.002**	**90.875**	**68.010**	**0.000**	**68.010**
(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)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Navigation Trainers (7)	-	-	10.371	-	-	19.854	-	-	53.100	-	-	41.400	-	-	0.000	-	-	41.400
1.1.2) AEGIS Ashore Trainer/C4I/Tech Refresh (8)	-	-	14.100	-	-	7.600	-	-	0.600	-	-	0.600	-	-	0.000	-	-	0.600
1.1.3) Combined IAMD/ASW Trainer (CIAT) (9)	-	-	27.960	-	-	12.300	-	-	11.300	-	-	11.250	-	-	0.000	-	-	11.250
1.1.4) Navy Training System Plan (NTSP TTE/TD Mods) (10)	-	-	8.643	-	-	9.100	-	-	11.900	-	-	3.400	-	-	0.000	-	-	3.400
1.1.6) Technical Training Equipment Modifications (11)	-	-	1.471	-	-	0.755	-	-	0.770	-	-	0.784	-	-	0.000	-	-	0.784
1.1.7) DDG & CG BMD 4.X/HM&E Modernization Training (12)	-	-	0.000	-	-	28.100	-	-	8.900	-	-	0.000	-	-	0.000	-	-	0.000
1.1.8) NATO SEASPARROW Surface Missile System (NSSMS)	-	-	0.000	-	-	10.200	-	-	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 / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Item Number / Title [DODIC]:** 1 / TS004 Surface Training Device Mods [TS004]
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)
Schoolhouse Trainer (13)																		
Subtotal: Recurring Cost	-	-	*62.545*	-	-	*87.909*	-	-	*86.570*	-	-	*57.434*	-	-	*0.000*	-	-	*57.434*
Subtotal: Flyaway Cost	**-**	**-**	***62.545***	**-**	**-**	***87.909***	**-**	**-**	***86.570***	**-**	**-**	***57.434***	**-**	**-**	***0.000***	**-**	**-**	***57.434***
Hardware - Trainers Cost Cost																		
Recurring Cost																		
2.1.1) SURFACE MINOR MODS (14)	-	-	3.161	-	-	13.286	-	-	2.705	-	-	8.276	-	-	0.000	-	-	8.276
2.1.2) FFT/SLEP/ MODULAR TRAINER (15)	-	-	3.300	-	-	1.707	-	-	1.100	-	-	1.800	-	-	0.000	-	-	1.800
2.1.3) FCA TRAINERS (16)	-	-	0.500	-	-	0.100	-	-	0.500	-	-	0.500	-	-	0.000	-	-	0.500
Subtotal: Recurring Cost	-	-	*6.961*	-	-	*15.093*	-	-	*4.305*	-	-	*10.576*	-	-	*0.000*	-	-	*10.576*
Subtotal: Hardware - Trainers Cost Cost	**-**	**-**	***6.961***	**-**	**-**	***15.093***	**-**	**-**	***4.305***	**-**	**-**	***10.576***	**-**	**-**	***0.000***	**-**	**-**	***10.576***
Gross/Weapon System Cost	**-**	**-**	**69.506**	**-**	**-**	**103.002**	**-**	**-**	**90.875**	**-**	**-**	**68.010**	**-**	**-**	**0.000**	**-**	**-**	**68.010**

Footnotes:

(7) FY21 funding decreased by $11.7M due to the fact that significant investments were made in FY20 for Navigation, Seamanship, and Ship-handling Trainers (NSST). Funding will address navigation shortfalls identified during CNO-directed Comprehensive Review following the USS John S. McCain and USS Fitzgerald collisions and provide for modifications/upgrades to shore based Navigation Trainers to support the modernization of all Surface Navigation, Seamanship, and Ship-handling Trainers (NSST) in all CONUS and OCONUS Fleet Concentration Areas as well as various schoolhouse locations, in support of the Surface Warfare Mariner Skills Training Program (MSTP). Modernization is critical to maintaining trainer service life and avoiding increased costs to maintain aging equipment. Additionally, provides FY21 funding for navigation shortfalls identified during CNO-directed Comprehensive Review following the USS John S. McCain and USS Fitzgerald collisions and provides for procurement of new trainers in support of the Surface Warfare Mariner Skills Training Program (MSTP). This will ensure all students have the necessary training devices, instructors and resources to execute the MSTP.

(8) Funds modernization, delivery, installation and life-cycle upgrades for a high fidelity Aegis Ashore Team Trainer in support of the land-based Aegis Ashore Training Continuum. Funds also provide for the integration of a C4I component, BMD Upgrades, and tech refresh. Also funds the training facility to train Navy Sailors who will man EPAA land-based BMD facilities in Poland and Romania. The Aegis Ashore Team Trainer (AATT) at Dam Neck, VA will serve as the single site for individual watch team tactical training, certification events and sustainment training for Aegis Ashore rotational crews assigned to AA BMD Host Nation Sites. Funding also supports the procurement and installation of an In-Plant Support System (IPSS) for the AATT. The AATT in Dam Neck is the only means of training and certifying crews prior to arriving at their host nation site. As an alternative to funding a second AATT, this IPSS will allow for information assurance (IA) and some maintenance to be conducted separate from the AATT, freeing time to train at the Dam Neck facility and supporting Poland coming online.

(9) Funds are required across the FYDP for tactical and other software licensing (all baselines), Information Assurance and routine software and hardware modifications of CIAT and Reconfigurable Combat Information Center (CIC) training (RCT) systems and ensures alignment with DON Chief Information Officer (CIO) Cyber requirements and tactical ship modernization. Funds are provided to procure and install hardware for Shore Based IAMD and ASW Trainers. Additionally, procuring and maintaining high fidelity training devices at Fleet Concentration Areas and Navy schoolhouses for operators is less costly than the traditional procuring of lower fidelity ship embedded training systems.

Exhibit P-5, Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Item Number / Title [DODIC]:** 1 / TS004 Surface Training Device Mods [TS004]
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(10) FY21 funding decreased by $8.5M in response to the number of formal courses of instruction that will require NTSP updates during the fiscal year. Failure to update these courses will decrease Sailors' ability to operate and maintain these critical systems, hindering ships from effectively executing missions and negatively impacting Fleet readiness. Funds are provided for the procurement and installation of training equipment and associated logistic support package as outlined in the NTSPs.

(11) Funds procure Hull Mechanical and Electrical (HM&E) and Combat Systems (CS) technical training equipment (TTE) for the training activities. Provides equipment to augment existing TTE due to increased student throughput, replaces equipment beyond economical repair and procures new equipment.

(12) FY21 funding decreased by $8.9M due to planned program completion. Funding supports two Ballistic Missile Defense (BMD) training labs as well as Hull Mechanical and Electrical (HM&E) training equipment for the schoolhouses in support of new BMD capabilities as well as new HM&E systems resulting from Cruiser/Destroyer modernization and new construction deliveries. Without this equipment, there is no way for the Navy to train Sailors and Officers to operate and maintain the new HM&E systems.

(13) Funding supports the procurement and installation of MK57 Mod 12/15 NATO Sea Sparrow Missile System (NSSMS) training and technical equipment in the schoolhouse. The MK57 Mod 12/15 is already installed on 23 ships. The current NSSMS schoolhouse trainer is the antiquated MK2 which is no longer common with the Fleet system, resulting in schoolhouse training for approximately 400 Sailors achieving just 10% of course objectives relative to the MK57 Mod 12/15. Without the MK57 Mod 12/15 NSSMS training and technical equipment there is no way to ensure that sailors are properly trained on how to operate and maintain the current MK57 Mod 12/15 NSSMS. Note: There is no Ready Relevant Learning (RRL) solution able to substitute for this training requirement.

(14) FY21 funding increased by $6.512M to support Surface and Expeditionary Warfare Training Plan (SEWTP) requirements including an increase in funding for Surface Training Readiness Management Systems (STRMS). Modifications are required to meet safety standards, keep training systems compatible with equivalent changes made to fleet operational equipment, and to enhance training capabilities. These modifications support the 200+ fielded Surface training systems and support fleet training requirements as dictated by the SEWTP. Funding supports Fleet Training Wholeness requirements in support of a DON-directed deep dive to develop alternatives to improve the Navy's competitive advantage via high-end training, including the Air Defense Strike Group Facility (ADSGF)/Integrated Training Facility (ITF) surface capability in Fallon, NV. Without this ADSGF/ITF surface capability, there is no way to train Carrier Strike Groups on high-end threats and capabilities related to Naval Integrated Fire Control-Counter Air (NIFC-CA). Funding also supports Anti-Submarine Warfare (ASW) Tactical Trainers, enabling advanced ASW training for Officers and Sailors. Funding also supports DDG 1000 Wholeness/Surface Strike Implementation to fund the execution of Navy Training System Plan requirements for the acquisition of life cycle training solutions to include operator and maintenance training on associated DDG 1000 unique Hull, Mechanical and Electrical Systems and Combat Control Systems. Funding also supports STRMS - procurement of hardware/software and implementation of the tracking system and incremental scaling/ modification of each mission area competency, proficiency and associated Training and Readiness (T&R) metric for comparison to Fleet requirements across all Cruiser/Destroyer (CRUDES) baselines.

(15) Funds are provided for the Service Life Extension Program (SLEP) Firefighter Trainer (FFT). FY21 funding increased by $0.7M in response to the fact that Firefighter Trainers are reaching the end of their life expectancy and more extensive SLEP tasks are needed to extend the life expectancy of the trainers to support the fleet.

(16) Funds are provided for upgrades to shore based trainers (Combat System, HM&E) in Fleet Concentration Areas, to include Multi-Mission Team Trainer upgrades

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 1 / MB040 - BFTT SHIP SETS
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)*	19.639	19.555	18.070	18.150	0.000	18.150	16.565	15.050	15.050	20.050	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	19.639	19.555	18.070	18.150	0.000	18.150	16.565	15.050	15.050	20.050	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**19.639**	**19.555**	**18.070**	**18.150**	**0.000**	**18.150**	**16.565**	**15.050**	**15.050**	**20.050**	**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 Battle Force Tactical Training (BFTT)/Advanced Training Domain (ATD)/Total Ship Training Capability (TSTC) family of systems provides realistic joint warfare training across the spectrum of armed conflict; realistic unit level team training in all warfare areas; a means to link ships together which are in different homeports for coordinated training; external stimulation of shipboard training systems; and simulation of non-shipboard forces. TSTC/ATD/BFTT uses a distributed architecture, integrating existing training systems, and uses Distributed Interactive Simulation (DIS) and High Level Architecture (HLA) protocols. TSTC/ATD/BFTT provides ships' Commanding Officers and Strike Group/Battle Force (SG/BF) Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Groups (ATGs), the Tactical Training Groups and C2F/C3F Fleet Synthetic Training (FSTs)/Live Virtual Constructive (LVC) exercises. The Total Ship Training Capability (TSTC) integrates existing and emergent onboard training and assessment system capabilities to simulate realistic, "train like you fight", combat-like conditions across weapon sensor and combat systems. Migration to TSTC improvements is required to ensure continued, persistent FST/LVC interoperability to deliver training that is commensurate with tactical capabilities. Commercial off the Shelf (COTS) Obsolescence mitigates replacement and upgrade of obsolete and out-of-production COTS components in BFTT systems installed throughout the Fleet to include the AN/USQ-T46D upgrade. BFTT T46D and ATD/T52 are core components of the TSTC.

BFTT T46D Ship set configurations vary depending on AEGIS or Ship Self Defense System (SSDS) installation. T46D's for SSDS include additional materials and units to be integrated for stimulation of the ships sensors.

TSTC/ATD/BFTT Ship Set funding will procure T46D's and T52's and subsequent variants of hardware and software for Build 5.x series in support of AN/SQQ-89 upgrades, AN/SLQ-32(V)6 upgrades, AN/USG-2B upgrades, and ATD software builds in support of AEGIS Baseline 9 TI-16 upgrades and SSDS upgrades -- which drives the difference in unit cost. Installation funding supports installation of (17) BFTT AN/USQ-T46D Systems. Additional costs will be incurred to procure more materials needed to meet integrated CEC training requirements, cyber security requirements and to maintain connectivity with Navy Continuous Training Environment (NCTE) to meet shipboard integrated training demands.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 1 / MB040 - BFTT SHIP SETS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: BFTT SHIP SETS - T46D'S	**Modification Type:** TBD	**Related RDT&E PEs:** 0204571N

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: MB040 - BFTT SHIP SETS												
B Kits												
Recurring												
1.1.1) BFTT SHIP SETS - NonOrganic (17)	16 / 15.094	14 / 14.000	11 / 11.000	13 / 12.155	- / -	13 / 12.155	10 / 10.000	10 / 10.000	10 / 10.000	15 / 15.000	Continuing	Continuing
Subtotal: Recurring	*- / 15.094*	*- / 14.000*	*- / 11.000*	*- / 12.155*	*- / -*	*- / 12.155*	*- / 10.000*	*- / 10.000*	*- / 10.000*	*- / 15.000*	*Continuing*	*Continuing*
Subtotal: MB040 - BFTT SHIP SETS	*16 / 15.094*	*14 / 14.000*	*11 / 11.000*	*13 / 12.155*	*- / -*	*13 / 12.155*	*10 / 10.000*	*10 / 10.000*	*10 / 10.000*	*15 / 15.000*	*Continuing*	*Continuing*
Subtotal: Procurement, All Modification Items	*- / 15.094*	*- / 14.000*	*- / 11.000*	*- / 12.155*	*- / -*	*- / 12.155*	*- / 10.000*	*- / 10.000*	*- / 10.000*	*- / 15.000*	*Continuing*	*Continuing*
Installation												
Modification Item 1 of 1: MB040 - BFTT SHIP SETS	- / 4.545	- / 5.555	- / 7.070	- / 5.995	- / 0.000	- / 5.995	- / 6.565	- / 5.050	- / 5.050	- / 5.050	- / 10.100	- / 54.980
Subtotal: Installation	*- / 4.545*	*- / 5.555*	*- / 7.070*	*- / 5.995*	*- / -*	*- / 5.995*	*- / 6.565*	*- / 5.050*	*- / 5.050*	*- / 5.050*	*- / 10.100*	*- / 54.980*
Total												
Total Cost (Procurement + Support + Installation)	**19.639**	**19.555**	**18.070**	**18.150**	**0.000**	**18.150**	**16.565**	**15.050**	**15.050**	**20.050**	**Continuing**	**Continuing**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 1 / MB040 - BFTT SHIP SETS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: MB040 - BFTT SHIP SETS

Manufacturer Information

Manufacturer Name: Various [18]	Manufacturer Location: Various
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 9

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates	Dec 2017	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023
Delivery Dates	Sep 2018	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024

Installation Information

Method of Implementation: AIT:: Installation Name: BFTT SHIP SETS

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 / 4.545	7 / 5.555	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	16 / 10.100
FY 2019	- / -	- / -	14 / 7.070	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 7.070
FY 2020	- / -	- / -	- / -	11 / 5.995	0 / 0.000	11 / 5.995	- / -	- / -	- / -	- / -	0 / 0.000	11 / 5.995
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	13 / 6.565	- / -	- / -	- / -	0 / 0.000	13 / 6.565
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 5.050	- / -	- / -	0 / 0.000	10 / 5.050
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 5.050	- / -	0 / 0.000	10 / 5.050
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 5.050	10 / 5.050	10 / 10.100
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 0.000	0 / 5.050	15 / 5.050
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	9 / 4.545	7 / 5.555	14 / 7.070	11 / 5.995	0 / 0.000	11 / 5.995	13 / 6.565	10 / 5.050	10 / 5.050	15 / 5.050	10 / 10.100	99 / 54.980

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	1	1	2	3	4	3	3	4	2	4	3	2	2	4	5	2	2	3	3	2	2	2	3	3	3	4	4	4	10	99
Out	9	-	2	2	3	-	5	5	4	-	4	3	4	-	6	5	2	-	5	3	2	2	2	3	3	3	4	4	4	10	99

Footnotes:

[17] Materials and quantities installed are required to meet cyber security requirements and to maintain connectivity with Navy Continuous Training Environment (NCTE) to meet shipboard integrated training demands.

[18] Contract and Delivery Dates reflect that ship sets are contracted to procure on average 1 year prior to installation.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 2 / MB040 BFTT 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)*	18.797	4.848	7.030	9.717	0.000	9.717	12.360	14.310	14.450	17.769	0.000	99.281
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	18.797	4.848	7.030	9.717	0.000	9.717	12.360	14.310	14.450	17.769	0.000	99.281
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**18.797**	**4.848**	**7.030**	**9.717**	**0.000**	**9.717**	**12.360**	**14.310**	**14.450**	**17.769**	**0.000**	**99.281**
(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:

Battle Force Tactical Training (BFTT)/ Total Ship Training Capability (TSTC) Upgrade Kits: Procure various quantities of upgrade kit/Engineering Change Proposal (ECP) system components, ShipAlts, Field Changes and Software Deliveries. ShipAlts are generally upgrades required to meet Combat Systems configuration requirements. Field Changes to existing BFTT, Battle force Electronic Warfare Trainer (BEWT), Total Ship Training Capability (TSTC), and Trainer Stimulator Simulator System (TSSS) systems include Information Assurance (IA) compliance, Obsolescence, Network upgrades and externally driven interface modifications. Software Deliveries required to support Combat System, IA and BFTT/BEWT/BEWT-II/TSTC/TSSS Hardware requirements. Upgrade Kits and interface upgrades implement Fleet prioritized warfighting training improvements to the TSTC/BFTT systems in order to meet evolving combat system capabilities. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Unit costs are variable.

Upgrade/Field Change Kit funding will procure and integrate various Battle Force Tactical Training (BFTT)/Total Ship Training Capability (TSTC) family of systems upgrades to include Battle Force Tactical Training Electronic Warfare Trainer (BEWT) Baseline II Hardware & Software upgrades, BFTT Hardware 4.2 and Software Baselines 5.0 and 5.1 upgrades, Advanced Training Domain (ATD) AN/T52 hardware, and Training Simulation Stimulation System (TSSS) legacy radar interface upgrades. Upgrade BFTT/TSTC Shipboard Connectivity Suite (SCS) through a Tech Refresh, which increases materials needed to meet cyber security requirements. Upgrade Shipboard Network Connectivity in support of Fleet Synthetic Training (FST) at sea capability in support of Strike Group certification training events. Upgrade various TSTC related shore and ship based training systems. Installation funding supports installation and removal of various training system hardware/software upgrades (ECPs/Field Change (FCs)) on surface ships and related shore sites.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 2 / MB040 BFTT UPGRADE KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	
Models of Systems Affected: Battle Force Tactical Training Upgrade Kits	**Modification Type:** TBD	**Related RDT&E PEs:** 0204571N

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: MB040 BFTT UPGRADE KITS												
B Kits												
Recurring												
1.1.1) BFTT UPGRADE KITS - NonOrganic (19)	183 / 5.430	40 / 2.214	74 / 1.687	103 / 4.193	- / -	103 / 4.193	129 / 7.042	120 / 7.187	119 / 7.167	142 / 10.240	- / -	910 / 45.160
Subtotal: Recurring	*- / 5.430*	*- / 2.214*	*- / 1.687*	*- / 4.193*	*- / -*	*- / 4.193*	*- / 7.042*	*- / 7.187*	*- / 7.167*	*- / 10.240*	*- / 0.000*	*- / 45.160*
Subtotal: MB040 BFTT UPGRADE KITS	*183 / 5.430*	*40 / 2.214*	*74 / 1.687*	*103 / 4.193*	*- / -*	*103 / 4.193*	*129 / 7.042*	*120 / 7.187*	*119 / 7.167*	*142 / 10.240*	*- / -*	*910 / 45.160*
Subtotal: Procurement, All Modification Items	*- / 5.430*	*- / 2.214*	*- / 1.687*	*- / 4.193*	*- / -*	*- / 4.193*	*- / 7.042*	*- / 7.187*	*- / 7.167*	*- / 10.240*	*- / 0.000*	*- / 45.160*
Installation												
Modification Item 1 of 1: MB040 BFTT UPGRADE KITS	- / 13.367	- / 2.634	- / 5.343	- / 5.524	- / 0.000	- / 5.524	- / 5.318	- / 7.123	- / 7.283	- / 7.529	- / 0.000	- / 54.121
Subtotal: Installation	*- / 13.367*	*- / 2.634*	*- / 5.343*	*- / 5.524*	*- / -*	*- / 5.524*	*- / 5.318*	*- / 7.123*	*- / 7.283*	*- / 7.529*	*- / 0.000*	*- / 54.121*
Total												
Total Cost (Procurement + Support + Installation)	**18.797**	**4.848**	**7.030**	**9.717**	**0.000**	**9.717**	**12.360**	**14.310**	**14.450**	**17.769**	**0.000**	**99.281**

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 2 / MB040 BFTT UPGRADE KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 1: MB040 BFTT UPGRADE KITS

Manufacturer Information

Manufacturer Name: VARIOUS [20]	Manufacturer Location: VARIOUS
Administrative Leadtime *(in Months)*: 3	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	Dec 2021	Dec 2022	Dec 2023	Dec 2024
Delivery Dates	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025

Installation Information

Method of Implementation: AIT:: Installation Name: BFTT 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	183 / 13.367	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	183 / 13.367
FY 2019	- / -	40 / 2.634	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	40 / 2.634
FY 2020	- / -	- / -	34 / 5.343	40 / 0.000	0 / 0.000	40 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	74 / 5.343
FY 2021	- / -	- / -	- / -	51 / 5.524	0 / 0.000	51 / 5.524	52 / 0.000	- / -	- / -	- / -	0 / 0.000	103 / 5.524
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	67 / 5.318	62 / 0.000	- / -	- / -	0 / 0.000	129 / 5.318
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	67 / 7.123	53 / 0.000	- / -	0 / 0.000	120 / 7.123
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 7.283	57 / 0.000	0 / 0.000	119 / 7.283
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	73 / 7.529	69 / 0.000	142 / 7.529
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	183 / 13.367	40 / 2.634	34 / 5.343	91 / 5.524	0 / 0.000	91 / 5.524	119 / 5.318	129 / 7.123	115 / 7.283	130 / 7.529	69 / 0.000	910 / 54.121

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	183	-	-	20	20	-	-	15	19	20	20	25	26	26	26	35	32	31	31	33	34	29	24	30	32	30	27	37	36	69	910
Out	183	-	-	20	20	-	-	15	19	20	20	25	26	26	26	35	32	31	31	33	34	29	24	30	32	30	27	37	36	69	910

Footnotes:

[19] This exhibit updates the installation schedule and contract/delivery dates to reflect planned delivery and installation starting FY21. The first two quarters of FY21 are 0 in the installation schedule to reflect this transition in methodology. Unit costs are variable due to the unique software and/or hardware required by the specific training capability improvement. For example a software upgrade kit average unit cost is $25K where as a hardware upgrade unit cost could be as much as $125K based on the upgrade requirements. The field change kits being procured and installed are required to rapidly update installations in order to meet cyber security requirements, timelines to maintain cyber security accreditations, and to meet Fleet Synthetic Training (FST) at sea permanent change modification.

Exhibit P-3a, Individual Modification: PB 2021 Navy		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5664 / Surface Training Equipment	**Modification Number / Title:** 2 / MB040 BFTT UPGRADE KITS
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

(20) Upgrade kit procurements are on average initiated in first quarter and become available in second quarter of the current fiscal year for installation in third quarter, finishing in second quarter of the next fiscal year.

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