Department of Defense
Fiscal Year (FY) 2018 Budget Estimates

May 2017

Navy

Justification Book Volume 4 of 5

Other Procurement, Navy

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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, $8,497,848,000, to remain available for obligation until September 30, 2020.

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Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2016 Base + OCO	FY 2017 PB Request with CR Adj Base	FY 2017 Total PB Requests* with CR Adj Base
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Other Procurement, Navy	6,585,466	6,471,930	6,689,919
Total Department of the Navy	6,585,466	6,471,930	6,689,919

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2017 PB Request with CR Adj OCO	FY 2017 Total PB Requests* with CR Adj OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj OCO
Other Procurement, Navy	12,186	22,686		22,686
Total Department of the Navy	12,186	22,686		22,686

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA	FY 2017 Total PB Requests* with CR Adj Base + OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj Base + OCO
Other Procurement, Navy	6,484,116	6,712,605		6,712,605
Total Department of the Navy	6,484,116	6,712,605		6,712,605

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Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Other Procurement, Navy	8,277,789	220,059	8,497,848
Total Department of the Navy	8,277,789	220,059	8,497,848

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2016 Base + OCO	FY 2017 PB Request with CR Adj Base	FY 2017 Total PB Requests* with CR Adj Base
01. Ships Support Equipment	1,942,753	1,878,390	1,948,076
02. Communications & Electronics Equip	2,347,567	2,122,908	2,184,808
03. Aviation Support Equipment	419,644	439,109	439,109
04. Ordnance Support Equipment	852,190	933,565	982,065
05. Civil Engineering Support Equip	55,671	84,345	84,345
06. Supply Support Equipment	247,302	316,609	316,609
07. Personnel & Command Support Equip	444,006	364,275	402,178
08. Spares and Repair Parts	276,333	199,660	199,660
20. Undistributed		133,069	133,069
Total Other Procurement, Navy	6,585,466	6,471,930	6,689,919

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2017 PB Request with CR Adj OCO	FY 2017 Total PB Requests* with CR Adj OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj OCO
01. Ships Support Equipment				
02. Communications & Electronics Equip	12,000	12,000		12,000
03. Aviation Support Equipment				
04. Ordnance Support Equipment	99,329	104,829		104,829
05. Civil Engineering Support Equip	630	630		630
06. Supply Support Equipment	25	25		25
07. Personnel & Command Support Equip	12,222	17,222		17,222
08. Spares and Repair Parts				
20. Undistributed	-112,020	-112,020		-112,020
Total Other Procurement, Navy	12,186	22,686		22,686

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA	FY 2017 Total PB Requests* with CR Adj Base + OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj Base + OCO
01. Ships Support Equipment	1,878,390	1,948,076		1,948,076
02. Communications & Electronics Equip	2,134,908	2,196,808		2,196,808
03. Aviation Support Equipment	439,109	439,109		439,109
04. Ordnance Support Equipment	1,032,894	1,086,894		1,086,894
05. Civil Engineering Support Equip	84,975	84,975		84,975
06. Supply Support Equipment	316,634	316,634		316,634
07. Personnel & Command Support Equip	376,497	419,400		419,400
08. Spares and Repair Parts	199,660	199,660		199,660
20. Undistributed	21,049	21,049		21,049
Total Other Procurement, Navy	6,484,116	6,712,605		6,712,605

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity	FY 2018 Base	FY 2018 OCO	FY 2018 Total
01. Ships Support Equipment	3,076,818	30,348	3,107,166
02. Communications & Electronics Equip	2,565,260	62,622	2,627,882
03. Aviation Support Equipment	441,542	29,245	470,787
04. Ordnance Support Equipment	929,371	34,406	963,777
05. Civil Engineering Support Equip	99,619	5,136	104,755
06. Supply Support Equipment	510,285	584	510,869
07. Personnel & Command Support Equip	376,329	56,540	432,869
08. Spares and Repair Parts	278,565	1,178	279,743
20. Undistributed			
Total Other Procurement, Navy	8,277,789	220,059	8,497,848

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                    Department of the Navy
                 FY 2018 President's Budget Request
             Exhibit P-1 FY 2018 President's Budget Request
                     Total Obligational Authority
                       (Dollars in Thousands)
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	Cost	FY 2017 PB Request with CR Adj Base Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	Cost	Sec
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Budget Activity 01: Ships Support Equipment

Ship Propulsion Equipment

1	LM-2500 Gas Turbine	A		4,881					U
2	Allison 501k Gas Turbine	A		5,814					U
3	Surface Power Equipment	A				15,514		15,514	U
4	Hybrid Electric Drive (HED)			29,106		40,132		15,132	U

Generators

| 5 | Surface Combatant HM&E | A | | 36,860 | | 29,974 | | 29,974 | U |

Navigation Equipment

| 6 | Other Navigation Equipment | A | | 63,481 | | 63,942 | | 63,942 | U |

Periscopes

| 7 | Sub Periscopes & Imaging Equip | A | | 63,109 | | | | | U |

Other Shipboard Equipment

8	Sub Periscope, Imaging and Supt Equip Prog	A				136,421		154,421	U
9	DDG Mod	A		421,195		367,766		432,766	U
10	Firefighting Equipment	A		13,983		14,743		14,743	U
11	Command and Control Switchboard	A		2,255		2,140		2,140	U
12	LHA/LHD Midlife	A		11,017		24,939		24,939	U
13	LCC 19/20 Extended Service Life Program	A		8,631					U

Department of the Navy
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

			FY 2017 PB Request with CR Adj OCO		FY 2017 Total PB Requests* with CR Adj OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj OCO		S e
Line No	Item Nomenclature	Ident Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	c
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Budget Activity 01: Ships Support Equipment

Ship Propulsion Equipment

1	LM-2500 Gas Turbine	A									U
2	Allison 501k Gas Turbine	A									U
3	Surface Power Equipment	A									U
4	Hybrid Electric Drive (HED)										U

Generators

| 5 | Surface Combatant HM&E | A | | | | | | | | | U |

Navigation Equipment

| 6 | Other Navigation Equipment | A | | | | | | | | | U |

Periscopes

| 7 | Sub Periscopes & Imaging Equip | A | | | | | | | | | U |

Other Shipboard Equipment

8	Sub Periscope, Imaging and Supt Equip Prog	A									U
9	DDG Mod	A									U
10	Firefighting Equipment	A									U
11	Command and Control Switchboard	A									U
12	LHA/LHD Midlife	A									U
13	LCC 19/20 Extended Service Life Program	A									U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
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Budget Activity 01: Ships Support Equipment

Ship Propulsion Equipment

1	LM-2500 Gas Turbine	A									U
2	Allison 501k Gas Turbine	A									U
3	Surface Power Equipment	A	15,514		15,514				15,514		U
4	Hybrid Electric Drive (HED)		40,132		15,132				15,132		U

Generators

| 5 | Surface Combatant HM&E | A | 29,974 | | 29,974 | | | | 29,974 | | U |

Navigation Equipment

| 6 | Other Navigation Equipment | A | 63,942 | | 63,942 | | | | 63,942 | | U |

Periscopes

| 7 | Sub Periscopes & Imaging Equip | A | | | | | | | | | U |

Other Shipboard Equipment

8	Sub Periscope, Imaging and Supt Equip Prog	A	136,421		154,421				154,421		U
9	DDG Mod	A	367,766		432,766				432,766		U
10	Firefighting Equipment	A	14,743		14,743				14,743		U
11	Command and Control Switchboard	A	2,140		2,140				2,140		U
12	LHA/LHD Midlife	A	24,939		24,939				24,939		U
13	LCC 19/20 Extended Service Life Program	A									U

Department of the Navy
FY 2018 President's Budget Request
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	Sec

Budget Activity 01: Ships Support Equipment

Ship Propulsion Equipment

1	LM-2500 Gas Turbine	A							U
2	Allison 501k Gas Turbine	A							U
3	Surface Power Equipment	A		41,910				41,910	U
4	Hybrid Electric Drive (HED)			6,331				6,331	U

Generators

| 5 | Surface Combatant HM&E | A | | 27,392 | | | | 27,392 | U |

Navigation Equipment

| 6 | Other Navigation Equipment | A | | 65,943 | | | | 65,943 | U |

Periscopes

| 7 | Sub Periscopes & Imaging Equip | A | | | | | | | U |

Other Shipboard Equipment

8	Sub Periscope, Imaging and Supt Equip Prog	A		151,240				151,240	U
9	DDG Mod	A		603,355				603,355	U
10	Firefighting Equipment	A		15,887				15,887	U
11	Command and Control Switchboard	A		2,240				2,240	U
12	LHA/LHD Midlife	A		30,287				30,287	U
13	LCC 19/20 Extended Service Life Program	A							U

Department of the Navy
FY 2018 President's Budget Request
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 PB Request with CR Adj Base Quantity	FY 2017 PB Request with CR Adj Base Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	FY 2017 Total PB Requests* with CR Adj Base Cost	Sec
14	Pollution Control Equipment	B		16,609		20,191		20,191	U
15	Submarine Support Equipment	A		10,498		8,995		8,995	U
16	Virginia Class Support Equipment	A		35,747		66,838		66,838	U
17	LCS Class Support Equipment			39,349		54,823		54,823	U
18	Submarine Batteries			23,072		23,359		23,359	U
19	LPD Class Support Equipment			37,929		40,321		40,321	U
20	DDG 1000 Class Support Equipment	A				33,404		33,404	U
21	Strategic Platform Support Equip	A		18,563		15,836		15,836	U
22	DSSP Equipment	A		8,851		806		806	U
23	CG Modernization	A		99,500					U
24	LCAC	A		15,125		3,090		3,090	U
25	Underwater EOD Programs			51,652		24,350		24,350	U
26	Items Less Than $5 Million	A		89,349		88,719		88,719	U
27	Chemical Warfare Detectors	A		3,027		2,873		2,873	U
28	Submarine Life Support System	A		7,399		6,043		6,043	U
	Reactor Plant Equipment								
29	Reactor Power Units	A							U
30	Reactor Components	A		296,095		342,158		342,158	U
	Ocean Engineering								
31	Diving and Salvage Equipment	A		15,982		8,973		8,973	U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

| | | | FY 2017 PB Request with CR Adj OCO | | FY 2017 Total PB Requests* with CR Adj OCO | | FY 2017 Less Enacted Div B P.L.114-254** OCO | | FY 2017 Remaining Req with CR Adj OCO | | S e |
Line No	Item Nomenclature	Ident Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	c
14	Pollution Control Equipment	B									U
15	Submarine Support Equipment	A									U
16	Virginia Class Support Equipment	A									U
17	LCS Class Support Equipment										U
18	Submarine Batteries										U
19	LPD Class Support Equipment										U
20	DDG 1000 Class Support Equipment	A									U
21	Strategic Platform Support Equip	A									U
22	DSSP Equipment	A									U
23	CG Modernization	A									U
24	LCAC	A									U
25	Underwater EOD Programs										U
26	Items Less Than $5 Million	A									U
27	Chemical Warfare Detectors	A									U
28	Submarine Life Support System	A									U
	Reactor Plant Equipment										
29	Reactor Power Units	A									U
30	Reactor Components	A									U
	Ocean Engineering										
31	Diving and Salvage Equipment	A									U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
14	Pollution Control Equipment	B		20,191		20,191				20,191	U
15	Submarine Support Equipment	A		8,995		8,995				8,995	U
16	Virginia Class Support Equipment	A		66,838		66,838				66,838	U
17	LCS Class Support Equipment			54,823		54,823				54,823	U
18	Submarine Batteries			23,359		23,359				23,359	U
19	LPD Class Support Equipment			40,321		40,321				40,321	U
20	DDG 1000 Class Support Equipment	A		33,404		33,404				33,404	U
21	Strategic Platform Support Equip	A		15,836		15,836				15,836	U
22	DSSP Equipment	A		806		806				806	U
23	CG Modernization	A									U
24	LCAC	A		3,090		3,090				3,090	U
25	Underwater EOD Programs			24,350		24,350				24,350	U
26	Items Less Than $5 Million	A		88,719		88,719				88,719	U
27	Chemical Warfare Detectors	A		2,873		2,873				2,873	U
28	Submarine Life Support System	A		6,043		6,043				6,043	U
	Reactor Plant Equipment										
29	Reactor Power Units	A									U
30	Reactor Components	A		342,158		342,158				342,158	U
	Ocean Engineering										
31	Diving and Salvage Equipment	A		8,973		8,973				8,973	U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	Sec
14	Pollution Control Equipment	B		17,293				17,293	U
15	Submarine Support Equipment	A		27,990				27,990	U
16	Virginia Class Support Equipment	A		46,610				46,610	U
17	LCS Class Support Equipment			47,955				47,955	U
18	Submarine Batteries			17,594				17,594	U
19	LPD Class Support Equipment			61,908				61,908	U
20	DDG 1000 Class Support Equipment	A							U
21	Strategic Platform Support Equip	A		15,812				15,812	U
22	DSSP Equipment	A		4,178				4,178	U
23	CG Modernization	A		306,050				306,050	U
24	LCAC	A		5,507				5,507	U
25	Underwater EOD Programs			55,922		12,348		68,270	U
26	Items Less Than $5 Million	A		96,909				96,909	U
27	Chemical Warfare Detectors	A		3,036				3,036	U
28	Submarine Life Support System	A		10,364				10,364	U
	Reactor Plant Equipment								
29	Reactor Power Units	A		324,925				324,925	U
30	Reactor Components	A		534,468				534,468	U
	Ocean Engineering								
31	Diving and Salvage Equipment	A		10,619				10,619	U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	Cost	FY 2017 PB Request with CR Adj Base Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	Cost	Sec
	Small Boats								
32	Standard Boats	A		29,982		43,684		55,370	U
	Training Equipment								
33	Other Ships Training Equipment	A		62,358					U
	Production Facilities Equipment								
34	Operating Forces Ipe	A		61,718		75,421		75,421	U
	Other Ship Support								
35	Nuclear Alterations	A		132,625		172,718		172,718	U
36	LCS Common Mission Modules Equipment			23,061		27,840		27,840	U
37	LCS MCM Mission Modules			67,451		57,146		57,146	U
38	LCS ASW Mission Modules					31,952		31,952	U
39	LCS SUW Mission Modules			35,228		22,466		22,466	U
40	LCS In-Service Modernization	A							U
41	Remote Minehunting System (RMS)	A		53,077					U
	Logistic Support								
42	LSD Midlife & Modernization			48,174		10,813		10,813	U
	Total Ships Support Equipment			1,942,753		1,878,390		1,948,076	

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
	Small Boats										
32	Standard Boats	A									U
	Training Equipment										
33	Other Ships Training Equipment	A									U
	Production Facilities Equipment										
34	Operating Forces Ipe	A									U
	Other Ship Support										
35	Nuclear Alterations	A									U
36	LCS Common Mission Modules Equipment										U
37	LCS MCM Mission Modules										U
38	LCS ASW Mission Modules										U
39	LCS SUW Mission Modules										U
40	LCS In-Service Modernization	A									U
41	Remote Minehunting System (RMS)	A									U
	Logistic Support										
42	LSD Midlife & Modernization										U
			----------		----------		----------		----------		
	Total Ships Support Equipment										

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	Sec
	Small Boats										
32	Standard Boats	A		43,684		55,370				55,370	U
	Training Equipment										
33	Other Ships Training Equipment	A									U
	Production Facilities Equipment										
34	Operating Forces Ipe	A		75,421		75,421				75,421	U
	Other Ship Support										
35	Nuclear Alterations	A		172,718		172,718				172,718	U
36	LCS Common Mission Modules Equipment			27,840		27,840				27,840	U
37	LCS MCM Mission Modules			57,146		57,146				57,146	U
38	LCS ASW Mission Modules			31,952		31,952				31,952	U
39	LCS SUW Mission Modules			22,466		22,466				22,466	U
40	LCS In-Service Modernization	A									U
41	Remote Minehunting System (RMS)	A									U
	Logistic Support										
42	LSD Midlife & Modernization			10,813		10,813				10,813	U
	Total Ships Support Equipment			1,878,390		1,948,076				1,948,076	

Department of the Navy
FY 2018 President's Budget Request
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	Sec
	Small Boats								
32	Standard Boats	A		46,094		18,000		64,094	U
	Training Equipment								
33	Other Ships Training Equipment	A							U
	Production Facilities Equipment								
34	Operating Forces Ipe	A		191,541				191,541	U
	Other Ship Support								
35	Nuclear Alterations	A							U
36	LCS Common Mission Modules Equipment			34,666				34,666	U
37	LCS MCM Mission Modules			55,870				55,870	U
38	LCS ASW Mission Modules								U
39	LCS SUW Mission Modules			52,960				52,960	U
40	LCS In-Service Modernization	A		74,426				74,426	U
41	Remote Minehunting System (RMS)	A							U
	Logistic Support								
42	LSD Midlife & Modernization			89,536				89,536	U
	Total Ships Support Equipment			3,076,818		30,348		3,107,166	

Department of the Navy
FY 2018 President's Budget Request
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 PB Request with CR Adj Base Quantity	FY 2017 PB Request with CR Adj Base Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	FY 2017 Total PB Requests* with CR Adj Base Cost	Sec
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Budget Activity 02: Communications & Electronics Equip

Ship Sonars

43	SPQ-9B Radar	A		19,841		14,363		14,363	U
44	AN/SQQ-89 Surf ASW Combat System	A		103,241		90,029		90,029	U
45	SSN Acoustics	A		232,134					U
46	SSN Acoustic Equipment	A				248,765		288,265	U
47	Undersea Warfare Support Equipment	A		7,331		7,163		7,163	U
48	Sonar Switches and Transducers	A		11,781					U

ASW Electronic Equipment

49	Submarine Acoustic Warfare System	A		19,718		21,291		21,291	U
50	SSTD	A		8,396		6,893		6,893	U
51	Fixed Surveillance System	A		146,968		145,701		145,701	U
52	SURTASS	A		26,153		36,136		46,136	U
53	Maritime Patrol and Reconnsaisance Force	A		13,725					U

Electronic Warfare Equipment

| 54 | AN/SLQ-32 | A | | 259,271 | | 274,892 | | 274,892 | U |

Reconnaissance Equipment

| 55 | Shipboard IW Exploit | A | | 138,002 | | 170,733 | | 170,733 | U |
| 56 | Automated Identification System (AIS) | | | 152 | | 958 | | 958 | U |

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
	Budget Activity 02: Communications & Electronics Equip										
	Ship Sonars										
43	SPQ-9B Radar	A									U
44	AN/SQQ-89 Surf ASW Combat System	A									U
45	SSN Acoustics	A									U
46	SSN Acoustic Equipment	A									U
47	Undersea Warfare Support Equipment	A									U
48	Sonar Switches and Transducers	A									U
	ASW Electronic Equipment										
49	Submarine Acoustic Warfare System	A									U
50	SSTD	A									U
51	Fixed Surveillance System	A									U
52	SURTASS	A									U
53	Maritime Patrol and Reconnsaisance Force	A									U
	Electronic Warfare Equipment										
54	AN/SLQ-32	A									U
	Reconnaissance Equipment										
55	Shipboard IW Exploit	A									U
56	Automated Identification System (AIS)										U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	Sec

Budget Activity 02: Communications & Electronics Equip

Ship Sonars

43	SPQ-9B Radar	A		14,363		14,363				14,363	U
44	AN/SQQ-89 Surf ASW Combat System	A		90,029		90,029				90,029	U
45	SSN Acoustics	A									U
46	SSN Acoustic Equipment	A		248,765		288,265				288,265	U
47	Undersea Warfare Support Equipment	A		7,163		7,163				7,163	U
48	Sonar Switches and Transducers	A									U

ASW Electronic Equipment

49	Submarine Acoustic Warfare System	A		21,291		21,291				21,291	U
50	SSTD	A		6,893		6,893				6,893	U
51	Fixed Surveillance System	A		145,701		145,701				145,701	U
52	SURTASS	A		36,136		46,136				46,136	U
53	Maritime Patrol and Reconnsaisance Force	A									U

Electronic Warfare Equipment

| 54 | AN/SLQ-32 | A | | 274,892 | | 274,892 | | | | 274,892 | U |

Reconnaissance Equipment

| 55 | Shipboard IW Exploit | A | | 170,733 | | 170,733 | | | | 170,733 | U |
| 56 | Automated Identification System (AIS) | | | 958 | | 958 | | | | 958 | U |

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Sec
Budget Activity 02: Communications & Electronics Equip									
Ship Sonars									
43	SPQ-9B Radar	A		30,086				30,086	U
44	AN/SQQ-89 Surf ASW Combat System	A		102,222				102,222	U
45	SSN Acoustics	A							U
46	SSN Acoustic Equipment	A		287,553		43,500		331,053	U
47	Undersea Warfare Support Equipment	A		13,653				13,653	U
48	Sonar Switches and Transducers	A							U
ASW Electronic Equipment									
49	Submarine Acoustic Warfare System	A		21,449				21,449	U
50	SSTD	A		12,867				12,867	U
51	Fixed Surveillance System	A		300,102				300,102	U
52	SURTASS	A		30,180				30,180	U
53	Maritime Patrol and Reconnsaisance Force	A							U
Electronic Warfare Equipment									
54	AN/SLQ-32	A		240,433				240,433	U
Reconnaissance Equipment									
55	Shipboard IW Exploit	A		187,007				187,007	U
56	Automated Identification System (AIS)			510				510	U

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Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 PB Request with CR Adj Base Quantity	FY 2017 PB Request with CR Adj Base Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	FY 2017 Total PB Requests* with CR Adj Base Cost	Sec
	Submarine Surveillance Equipment								
57	Submarine Support Equipment Prog	A		83,472					U
	Other Ship Electronic Equipment								
58	Cooperative Engagement Capability	B		25,695		22,034		22,034	U
59	Trusted Information System (TIS)			284					U
60	Naval Tactical Command Support System (NTCSS)	A		14,416		12,336		12,336	U
61	ATDLS	A		22,169		30,105		30,105	U
62	Navy Command and Control System (NCCS)			4,054		4,556		4,556	U
63	Minesweeping System Replacement	A		21,014		56,675		56,675	U
64	Shallow Water MCM	B				8,875		8,875	U
65	Navstar GPS Receivers (SPACE)	A		11,129		12,752		12,752	U
66	American Forces Radio and TV Service	A		4,240		4,577		4,577	U
67	Strategic Platform Support Equip	A		17,440		8,972		8,972	U
	Training Equipment								
68	Other Training Equipment	A		41,314					U
	Aviation Electronic Equipment								
69	Matcals	A		10,011					U
70	Ashore ATC Equipment	A				75,068		75,068	U
71	Afloat ATC Equipment	A				33,484		33,484	U
72	Shipboard Air Traffic Control	B		9,346					U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
	Submarine Surveillance Equipment										
57	Submarine Support Equipment Prog	A									U
	Other Ship Electronic Equipment										
58	Cooperative Engagement Capability	B									U
59	Trusted Information System (TIS)										U
60	Naval Tactical Command Support System (NTCSS)	A									U
61	ATDLS	A									U
62	Navy Command and Control System (NCCS)										U
63	Minesweeping System Replacement	A									U
64	Shallow Water MCM	B									U
65	Navstar GPS Receivers (SPACE)	A									U
66	American Forces Radio and TV Service	A									U
67	Strategic Platform Support Equip	A									U
	Training Equipment										
68	Other Training Equipment	A									U
	Aviation Electronic Equipment										
69	Matcals	A									U
70	Ashore ATC Equipment	A									U
71	Afloat ATC Equipment	A									U
72	Shipboard Air Traffic Control	B									U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
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	Submarine Surveillance Equipment										
57	Submarine Support Equipment Prog	A									U
	Other Ship Electronic Equipment										
58	Cooperative Engagement Capability	B		22,034		22,034				22,034	U
59	Trusted Information System (TIS)										U
60	Naval Tactical Command Support System (NTCSS)	A		12,336		12,336				12,336	U
61	ATDLS	A		30,105		30,105				30,105	U
62	Navy Command and Control System (NCCS)			4,556		4,556				4,556	U
63	Minesweeping System Replacement	A		56,675		56,675				56,675	U
64	Shallow Water MCM	B		8,875		8,875				8,875	U
65	Navstar GPS Receivers (SPACE)	A		12,752		12,752				12,752	U
66	American Forces Radio and TV Service	A		4,577		4,577				4,577	U
67	Strategic Platform Support Equip	A		8,972		8,972				8,972	U
	Training Equipment										
68	Other Training Equipment	A									U
	Aviation Electronic Equipment										
69	Matcals	A									U
70	Ashore ATC Equipment	A		75,068		75,068				75,068	U
71	Afloat ATC Equipment	A		33,484		33,484				33,484	U
72	Shipboard Air Traffic Control	B									U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Sec
	Submarine Surveillance Equipment								
57	Submarine Support Equipment Prog	A							U
	Other Ship Electronic Equipment								
58	Cooperative Engagement Capability	B		23,892				23,892	U
59	Trusted Information System (TIS)								U
60	Naval Tactical Command Support System (NTCSS)	A		10,741				10,741	U
61	ATDLS	A		38,016				38,016	U
62	Navy Command and Control System (NCCS)			4,512				4,512	U
63	Minesweeping System Replacement	A		31,531				31,531	U
64	Shallow Water MCM	B		8,796				8,796	U
65	Navstar GPS Receivers (SPACE)	A		15,923				15,923	U
66	American Forces Radio and TV Service	A		2,730				2,730	U
67	Strategic Platform Support Equip	A		6,889				6,889	U
	Training Equipment								
68	Other Training Equipment	A							U
	Aviation Electronic Equipment								
69	Matcals	A							U
70	Ashore ATC Equipment	A		71,882				71,882	U
71	Afloat ATC Equipment	A		44,611				44,611	U
72	Shipboard Air Traffic Control	B							U

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FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 PB Request with CR Adj Base Quantity	FY 2017 PB Request with CR Adj Base Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	FY 2017 Total PB Requests* with CR Adj Base Cost	Sec
73	Automatic Carrier Landing System	A		21,281					U
74	National Air Space System	B		25,621					U
75	Fleet Air Traffic Control Systems	A		8,249					U
76	Landing Systems	A		11,910					U
77	ID Systems	A		29,676		22,177		22,177	U
78	Naval Mission Planning Systems	A		13,737		14,273		14,273	U
Other Shore Electronic Equipment									
79	Deployable Joint Command & Control	A		1,314					U
80	Tactical/Mobile C4I Systems	A		13,600		27,927		27,927	U
81	DCGS-N	A		31,809		12,676		12,676	U
82	CANES			274,641		212,030		212,030	U
83	RADIAC	A		6,768		8,092		8,092	U
84	CANES-Intell			28,695		36,013		36,013	U
85	GPETE	A		6,962		6,428		6,428	U
86	MASF			290					U
87	Integ Combat System Test Facility	A		13,614		8,376		8,376	U
88	EMI Control Instrumentation	A		4,175		3,971		3,971	U
89	Items Less Than $5 Million	A		66,176		58,721		58,721	U
Shipboard Communications									
90	Shipboard Tactical Communications	A		8,277		17,366		17,366	U

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                          Department of the Navy
                      FY 2018 President's Budget Request
                  Exhibit P-1 FY 2018 President's Budget Request
                         Total Obligational Authority
                          (Dollars in Thousands)
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Appropriation: 1810N Other Procurement, Navy

			FY 2017 PB Request with CR Adj OCO		FY 2017 Total PB Requests* with CR Adj OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj OCO		S e
Line No	Item Nomenclature	Ident Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	c
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73	Automatic Carrier Landing System	A									U
74	National Air Space System	B									U
75	Fleet Air Traffic Control Systems	A									U
76	Landing Systems	A									U
77	ID Systems	A									U
78	Naval Mission Planning Systems	A									U
	Other Shore Electronic Equipment										
79	Deployable Joint Command & Control	A									U
80	Tactical/Mobile C4I Systems	A									U
81	DCGS-N	A		12,000		12,000				12,000	U
82	CANES										U
83	RADIAC	A									U
84	CANES-Intell										U
85	GPETE	A									U
86	MASF										U
87	Integ Combat System Test Facility	A									U
88	EMI Control Instrumentation	A									U
89	Items Less Than $5 Million	A									U
	Shipboard Communications										
90	Shipboard Tactical Communications	A									U

Department of the Navy
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Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
73	Automatic Carrier Landing System	A									U
74	National Air Space System	B									U
75	Fleet Air Traffic Control Systems	A									U
76	Landing Systems	A									U
77	ID Systems	A		22,177		22,177				22,177	U
78	Naval Mission Planning Systems	A		14,273		14,273				14,273	U
	Other Shore Electronic Equipment										
79	Deployable Joint Command & Control	A									U
80	Tactical/Mobile C4I Systems	A		27,927		27,927				27,927	U
81	DCGS-N	A		24,676		24,676				24,676	U
82	CANES			212,030		212,030				212,030	U
83	RADIAC	A		8,092		8,092				8,092	U
84	CANES-Intell			36,013		36,013				36,013	U
85	GPETE	A		6,428		6,428				6,428	U
86	MASF										U
87	Integ Combat System Test Facility	A		8,376		8,376				8,376	U
88	EMI Control Instrumentation	A		3,971		3,971				3,971	U
89	Items Less Than $5 Million	A		58,721		58,721				58,721	U
	Shipboard Communications										
90	Shipboard Tactical Communications	A		17,366		17,366				17,366	U

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Sec
73	Automatic Carrier Landing System	A							U
74	National Air Space System	B							U
75	Fleet Air Traffic Control Systems	A							U
76	Landing Systems	A							U
77	ID Systems	A		21,239				21,239	U
78	Naval Mission Planning Systems	A		11,976		2,550		14,526	U
	Other Shore Electronic Equipment								
79	Deployable Joint Command & Control	A							U
80	Tactical/Mobile C4I Systems	A		32,425		7,900		40,325	U
81	DCGS-N	A		13,790		6,392		20,182	U
82	CANES			322,754				322,754	U
83	RADIAC	A		10,718				10,718	U
84	CANES-Intell			48,028				48,028	U
85	GPETE	A		6,861				6,861	U
86	MASF			8,081				8,081	U
87	Integ Combat System Test Facility	A		5,019				5,019	U
88	EMI Control Instrumentation	A		4,188				4,188	U
89	Items Less Than $5 Million	A		105,292				105,292	U
	Shipboard Communications								
90	Shipboard Tactical Communications	A		23,695				23,695	U

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                      Department of the Navy
                  FY 2018 President's Budget Request
             Exhibit P-1 FY 2018 President's Budget Request
                     Total Obligational Authority
                        (Dollars in Thousands)
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	Cost	FY 2017 PB Request with CR Adj Base Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	Cost	S e c
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91	Ship Communications Automation	A		121,817		102,479		114,879	U
92	Communications Items Under $5M	A		17,025		10,403		10,403	U
	Submarine Communications								
93	Submarine Broadcast Support	A		15,485		34,151		34,151	U
94	Submarine Communication Equipment	A		58,037		64,529		64,529	U
	Satellite Communications								
95	Satellite Communications Systems	A		30,892		14,414		14,414	U
96	Navy Multiband Terminal (NMT)			118,142		38,365		38,365	U
	Shore Communications								
97	Joint Communications Support Element (JCSE)	A		4,591		4,156		4,156	U
98	Electrical Power Systems	A		1,246					U
	Cryptographic Equipment								
99	Info Systems Security Program (ISSP)	A		126,237		85,694		85,694	U
100	MIO Intel Exploitation Team	A		970		920		920	U
	Cryptologic Equipment								
101	Cryptologic Communications Equip	A		11,433		21,098		21,098	U
	Other Electronic Support								
102	Navy METOC-2***	A		1,483					U
103	Navy METOC-3***	A		483					U
104	USMC METOC-2***	A		323					U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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                          Department of the Navy
                     FY 2018 President's Budget Request
                    Exhibit P-1 FY 2018 President's Budget Request
                          Total Obligational Authority
                             (Dollars in Thousands)
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
91	Ship Communications Automation	A									U
92	Communications Items Under $5M	A									U
	Submarine Communications										
93	Submarine Broadcast Support	A									U
94	Submarine Communication Equipment	A									U
	Satellite Communications										
95	Satellite Communications Systems	A									U
96	Navy Multiband Terminal (NMT)										U
	Shore Communications										
97	Joint Communications Support Element (JCSE)	A									U
98	Electrical Power Systems	A									U
	Cryptographic Equipment										
99	Info Systems Security Program (ISSP)	A									U
100	MIO Intel Exploitation Team	A									U
	Cryptologic Equipment										
101	Cryptologic Communications Equip	A									U
	Other Electronic Support										
102	Navy METOC-2***	A									U
103	Navy METOC-3***	A									U
104	USMC METOC-2***	A									U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
91	Ship Communications Automation	A		102,479		114,879				114,879	U
92	Communications Items Under $5M	A		10,403		10,403				10,403	U
	Submarine Communications										
93	Submarine Broadcast Support	A		34,151		34,151				34,151	U
94	Submarine Communication Equipment	A		64,529		64,529				64,529	U
	Satellite Communications										
95	Satellite Communications Systems	A		14,414		14,414				14,414	U
96	Navy Multiband Terminal (NMT)			38,365		38,365				38,365	U
	Shore Communications										
97	Joint Communications Support Element (JCSE)	A		4,156		4,156				4,156	U
98	Electrical Power Systems	A									U
	Cryptographic Equipment										
99	Info Systems Security Program (ISSP)	A		85,694		85,694				85,694	U
100	MIO Intel Exploitation Team	A		920		920				920	U
	Cryptologic Equipment										
101	Cryptologic Communications Equip	A		21,098		21,098				21,098	U
	Other Electronic Support										
102	Navy METOC-2***	A									U
103	Navy METOC-3***	A									U
104	USMC METOC-2***	A									U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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                        Department of the Navy
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                        Total Obligational Authority
                          (Dollars in Thousands)
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	Sec
91	Ship Communications Automation	A		103,990				103,990	U
92	Communications Items Under $5M	A		18,577				18,577	U
	Submarine Communications								
93	Submarine Broadcast Support	A		29,669				29,669	U
94	Submarine Communication Equipment	A		86,204				86,204	U
	Satellite Communications								
95	Satellite Communications Systems	A		14,654				14,654	U
96	Navy Multiband Terminal (NMT)			69,764				69,764	U
	Shore Communications								
97	Joint Communications Support Element (JCSE)	A		4,256				4,256	U
98	Electrical Power Systems	A							U
	Cryptographic Equipment								
99	Info Systems Security Program (ISSP)	A		89,663				89,663	U
100	MIO Intel Exploitation Team	A		961				961	U
	Cryptologic Equipment								
101	Cryptologic Communications Equip	A		11,287		2,280		13,567	U
	Other Electronic Support								
102	Navy METOC-2***	A							U
103	Navy METOC-3***	A							U
104	USMC METOC-2***	A							U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 PB Request with CR Adj Base Quantity	FY 2017 PB Request with CR Adj Base Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	FY 2017 Total PB Requests* with CR Adj Base Cost	Sec
105	USMC METOC-1***	A		323					U
106	Monitoring – Hub***	A		308					U
107	DON UAS Video 5***	A		3,000					U
108	DON Robotics***	A		9,100					U
109	DON ACTS***	A		1,544					U
110	Coast Guard Equipment	A		2,529		32,291		32,291	U
	Drug Interdiction Support								
111	Other Drug Interdiction Support	A		4,507					U
	Total Communications & Electronics Equip			2,347,567		2,122,908		2,184,808	

Budget Activity 03: Aviation Support Equipment

Sonobuoys

112	Sonobuoys - All Types	A		166,385		162,588		162,588	U

Aircraft Support Equipment

113	Weapons Range Support Equipment	A		46,979		58,116		58,116	U
114	Aircraft Support Equipment	A		127,774		120,324		120,324	U
115	Advanced Arresting Gear (AAG)	A							U
116	Meteorological Equipment	A		14,997		29,253		29,253	U
117	DCRS/DPL	A		638		632		632	U
118	Airborne Mine Countermeasures	A		14,098		29,097		29,097	U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
105	USMC METOC-1***	A									U
106	Monitoring – Hub***	A									U
107	DON UAS Video 5***	A									U
108	DON Robotics***	A									U
109	DON ACTS***	A									U
110	Coast Guard Equipment	A									U

Drug Interdiction Support

| 111 | Other Drug Interdiction Support | A | | | | | | | | | U |
| | Total Communications & Electronics Equip | | | 12,000 | | 12,000 | | | | 12,000 | |

Budget Activity 03: Aviation Support Equipment

Sonobuoys

| 112 | Sonobuoys - All Types | A | | | | | | | | | U |

Aircraft Support Equipment

113	Weapons Range Support Equipment	A									U
114	Aircraft Support Equipment	A									U
115	Advanced Arresting Gear (AAG)	A									U
116	Meteorological Equipment	A									U
117	DCRS/DPL	A									U
118	Airborne Mine Countermeasures	A									U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	Sec
105	USMC METOC-1***	A									U
106	Monitoring – Hub***	A									U
107	DON UAS Video 5***	A									U
108	DON Robotics***	A									U
109	DON ACTS***	A									U
110	Coast Guard Equipment	A	32,291		32,291				32,291		U
	Drug Interdiction Support										
111	Other Drug Interdiction Support	A									U
	Total Communications & Electronics Equip		2,134,908		2,196,808				2,196,808		

Budget Activity 03: Aviation Support Equipment

Line No	Item Nomenclature	Ident Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Sec
	Sonobuoys										
112	Sonobuoys - All Types	A	162,588		162,588				162,588		U
	Aircraft Support Equipment										
113	Weapons Range Support Equipment	A	58,116		58,116				58,116		U
114	Aircraft Support Equipment	A	120,324		120,324				120,324		U
115	Advanced Arresting Gear (AAG)	A									U
116	Meteorological Equipment	A	29,253		29,253				29,253		U
117	DCRS/DPL	A	632		632				632		U
118	Airborne Mine Countermeasures	A	29,097		29,097				29,097		U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Sec
105	USMC METOC-1***	A							U
106	Monitoring – Hub***	A							U
107	DON UAS Video 5***	A							U
108	DON Robotics***	A							U
109	DON ACTS***	A							U
110	Coast Guard Equipment	A		36,584				36,584	U
	Drug Interdiction Support								
111	Other Drug Interdiction Support	A							U
	Total Communications & Electronics Equip			2,565,260		62,622		2,627,882	
	Budget Activity 03: Aviation Support Equipment								
	Sonobuoys								
112	Sonobuoys - All Types	A		173,616				173,616	U
	Aircraft Support Equipment								
113	Weapons Range Support Equipment	A		72,110				72,110	U
114	Aircraft Support Equipment	A		108,482				108,482	U
115	Advanced Arresting Gear (AAG)	A		10,900				10,900	U
116	Meteorological Equipment	A		21,137				21,137	U
117	DCRS/DPL	A		660				660	U
118	Airborne Mine Countermeasures	A		20,605				20,605	U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	Cost	FY 2017 PB Request with CR Adj Base Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	Cost	Sec
119	Aviation Support Equipment	A		48,773		39,099		39,099	U
	Total Aviation Support Equipment			419,644		439,109		439,109	

Budget Activity 04: Ordnance Support Equipment

Ship Gun System Equipment

| 120 | Ship Gun Systems Equipment | A | | 5,300 | | 6,191 | | 6,191 | U |

Ship Missile Systems Equipment

| 121 | Ship Missile Support Equipment | A | | 276,503 | | 320,446 | | 320,446 | U |
| 122 | Tomahawk Support Equipment | A | | 71,245 | | 71,046 | | 95,546 | U |

FBM Support Equipment

| 123 | Strategic Missile Systems Equip | A | | 240,677 | | 215,138 | | 215,138 | U |

ASW Support Equipment

| 124 | SSN Combat Control Systems | A | | 96,040 | | 130,715 | | 144,715 | U |
| 125 | ASW Support Equipment | A | | 30,189 | | 26,431 | | 36,431 | U |

Other Ordnance Support Equipment

| 126 | Explosive Ordnance Disposal Equip | B | | 22,623 | | 11,821 | | 11,821 | U |
| 127 | Items Less Than $5 Million | A | | 9,906 | | 6,243 | | 6,243 | U |

Other Expendable Ordnance

| 128 | Submarine Training Device Mods | A | | | | 48,020 | | 48,020 | U |
| 129 | Training Device Mods | A | | 99,707 | | | | | U |

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Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
119	Aviation Support Equipment	A									U
			----------		----------		----------		----------		
	Total Aviation Support Equipment										

Budget Activity 04: Ordnance Support Equipment

 Ship Gun System Equipment

120	Ship Gun Systems Equipment	A									U
	Ship Missile Systems Equipment										
121	Ship Missile Support Equipment	A									U
122	Tomahawk Support Equipment	A									U
	FBM Support Equipment										
123	Strategic Missile Systems Equip	A									U
	ASW Support Equipment										
124	SSN Combat Control Systems	A									U
125	ASW Support Equipment	A									U
	Other Ordnance Support Equipment										
126	Explosive Ordnance Disposal Equip	B		99,329		104,829				104,829	U
127	Items Less Than $5 Million	A									U
	Other Expendable Ordnance										
128	Submarine Training Device Mods	A									U
129	Training Device Mods	A									U

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FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
----	-----------------	-----	--------	----	--------	----	--------	----	--------	----	-
119	Aviation Support Equipment	A		39,099		39,099				39,099	U
	Total Aviation Support Equipment			439,109		439,109				439,109	

Budget Activity 04: Ordnance Support Equipment

  Ship Gun System Equipment

| 120 | Ship Gun Systems Equipment | A | | 6,191 | | 6,191 | | | | 6,191 | U |

  Ship Missile Systems Equipment

| 121 | Ship Missile Support Equipment | A | | 320,446 | | 320,446 | | | | 320,446 | U |
| 122 | Tomahawk Support Equipment | A | | 71,046 | | 95,546 | | | | 95,546 | U |

  FBM Support Equipment

| 123 | Strategic Missile Systems Equip | A | | 215,138 | | 215,138 | | | | 215,138 | U |

  ASW Support Equipment

| 124 | SSN Combat Control Systems | A | | 130,715 | | 144,715 | | | | 144,715 | U |
| 125 | ASW Support Equipment | A | | 26,431 | | 36,431 | | | | 36,431 | U |

  Other Ordnance Support Equipment

| 126 | Explosive Ordnance Disposal Equip | B | | 111,150 | | 116,650 | | | | 116,650 | U |
| 127 | Items Less Than $5 Million | A | | 6,243 | | 6,243 | | | | 6,243 | U |

  Other Expendable Ordnance

| 128 | Submarine Training Device Mods | A | | 48,020 | | 48,020 | | | | 48,020 | U |
| 129 | Training Device Mods | A | | | | | | | | | 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 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	Sec
119	Aviation Support Equipment	A		34,032		29,245		63,277	U
				----------		----------		----------	
	Total Aviation Support Equipment			441,542		29,245		470,787	

Budget Activity 04: Ordnance Support Equipment

 Ship Gun System Equipment

| 120 | Ship Gun Systems Equipment | A | | 5,277 | | | | 5,277 | U |

 Ship Missile Systems Equipment

| 121 | Ship Missile Support Equipment | A | | 272,359 | | 2,436 | | 274,795 | U |
| 122 | Tomahawk Support Equipment | A | | 73,184 | | | | 73,184 | U |

 FBM Support Equipment

| 123 | Strategic Missile Systems Equip | A | | 246,221 | | | | 246,221 | U |

 ASW Support Equipment

| 124 | SSN Combat Control Systems | A | | 129,972 | | | | 129,972 | U |
| 125 | ASW Support Equipment | A | | 23,209 | | | | 23,209 | U |

 Other Ordnance Support Equipment

| 126 | Explosive Ordnance Disposal Equip | B | | 15,596 | | 31,970 | | 47,566 | U |
| 127 | Items Less Than $5 Million | A | | 5,981 | | | | 5,981 | U |

 Other Expendable Ordnance

| 128 | Submarine Training Device Mods | A | | 74,550 | | | | 74,550 | U |
| 129 | Training Device Mods | A | | | | | | | U |

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	Cost	FY 2017 PB Request with CR Adj Base Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	Cost	Sec
130	Surface Training Equipment	A				97,514		97,514	U
	Total Ordnance Support Equipment			852,190		933,565		982,065	

Budget Activity 05: Civil Engineering Support Equip

 Civil Engineering Support Equipment

131	Passenger Carrying Vehicles	A		2,438		8,853		8,853	U
132	General Purpose Trucks	A		2,493		4,928		4,928	U
133	Construction & Maintenance Equip	A		2,578		18,527		18,527	U
134	Fire Fighting Equipment	A		14,705		13,569		13,569	U
135	Tactical Vehicles	B		2,898		14,917		14,917	U
136	Amphibious Equipment	A		12,517		7,676		7,676	U
137	Pollution Control Equipment	A		3,018		2,321		2,321	U
138	Items Under $5 Million	A		13,838		12,459		12,459	U
139	Physical Security Vehicles	A		1,186		1,095		1,095	U
	Total Civil Engineering Support Equip			55,671		84,345		84,345	

Budget Activity 06: Supply Support Equipment

 Supply Support Equipment

140	Materials Handling Equipment	A		19,211					U
141	Supply Equipment	A				16,023		16,023	U
142	Other Supply Support Equipment	A		10,469					U

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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	Sec
130	Surface Training Equipment	A									U
	Total Ordnance Support Equipment			99,329		104,829				104,829	

Budget Activity 05: Civil Engineering Support Equip

 Civil Engineering Support Equipment

131	Passenger Carrying Vehicles	A									U
132	General Purpose Trucks	A									U
133	Construction & Maintenance Equip	A									U
134	Fire Fighting Equipment	A		630		630				630	U
135	Tactical Vehicles	B									U
136	Amphibious Equipment	A									U
137	Pollution Control Equipment	A									U
138	Items Under $5 Million	A									U
139	Physical Security Vehicles	A									U
	Total Civil Engineering Support Equip			630		630				630	

Budget Activity 06: Supply Support Equipment

 Supply Support Equipment

140	Materials Handling Equipment	A									U
141	Supply Equipment	A									U
142	Other Supply Support Equipment	A									U

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Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	Sec
130	Surface Training Equipment	A		97,514		97,514				97,514	U
	Total Ordnance Support Equipment			1,032,894		1,086,894				1,086,894	

Budget Activity 05: Civil Engineering Support Equip

 Civil Engineering Support Equipment

Line No	Item Nomenclature	Ident Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Sec
131	Passenger Carrying Vehicles	A		8,853		8,853				8,853	U
132	General Purpose Trucks	A		4,928		4,928				4,928	U
133	Construction & Maintenance Equip	A		18,527		18,527				18,527	U
134	Fire Fighting Equipment	A		14,199		14,199				14,199	U
135	Tactical Vehicles	B		14,917		14,917				14,917	U
136	Amphibious Equipment	A		7,676		7,676				7,676	U
137	Pollution Control Equipment	A		2,321		2,321				2,321	U
138	Items Under $5 Million	A		12,459		12,459				12,459	U
139	Physical Security Vehicles	A		1,095		1,095				1,095	U
	Total Civil Engineering Support Equip			84,975		84,975				84,975	

Budget Activity 06: Supply Support Equipment

 Supply Support Equipment

Line No	Item Nomenclature	Ident Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Sec
140	Materials Handling Equipment	A									U
141	Supply Equipment	A		16,023		16,023				16,023	U
142	Other Supply Support Equipment	A									U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Sec
130	Surface Training Equipment	A		83,022				83,022	U
				----------		----------		----------	
	Total Ordnance Support Equipment			929,371		34,406		963,777	

Budget Activity 05: Civil Engineering Support Equip

Civil Engineering Support Equipment

131	Passenger Carrying Vehicles	A		5,299				5,299	U
132	General Purpose Trucks	A		2,946		496		3,442	U
133	Construction & Maintenance Equip	A		34,970				34,970	U
134	Fire Fighting Equipment	A		2,541		2,304		4,845	U
135	Tactical Vehicles	B		19,699		2,336		22,035	U
136	Amphibious Equipment	A		12,162				12,162	U
137	Pollution Control Equipment	A		2,748				2,748	U
138	Items Under $5 Million	A		18,084				18,084	U
139	Physical Security Vehicles	A		1,170				1,170	U
				----------		----------		----------	
	Total Civil Engineering Support Equip			99,619		5,136		104,755	

Budget Activity 06: Supply Support Equipment

Supply Support Equipment

140	Materials Handling Equipment	A							U
141	Supply Equipment	A		21,797		164		21,961	U
142	Other Supply Support Equipment	A							U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	Cost	FY 2017 PB Request with CR Adj Base Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	Cost	Sec
143	First Destination Transportation	A		5,908		5,115		5,115	U
144	Special Purpose Supply Systems	A		211,714		295,471		295,471	U
	Total Supply Support Equipment			247,302		316,609		316,609	

Budget Activity 07:   Personnel & Command Support Equip

 Training Devices

| 145 | Training Support Equipment | A | | 7,468 | | | | | U |
| 146 | Training and Education Equipment | A | | | | 9,504 | | 9,504 | U |

 Command Support Equipment

147	Command Support Equipment	A		29,745		37,180		44,680	U
148	Education Support Equipment	A		3,180					U
149	Medical Support Equipment	A		32,790		4,128		4,128	U
151	Naval MIP Support Equipment	A		4,608		1,925		1,925	U
152	Operating Forces Support Equipment	A		6,607		4,777		21,033	U
153	C4ISR Equipment	A		9,929		9,073		9,073	U
154	Environmental Support Equipment	A		23,009		21,107		21,107	U
155	Physical Security Equipment	A		93,478		100,906		110,203	U
156	Enterprise Information Technology	A		95,094		67,544		67,544	U

 Other

| 159 | Cancelled Account Adjustments | A | | 17 | | | | | U |

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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO		FY 2017 Total PB Requests* with CR Adj OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
143	First Destination Transportation	A		25		25				25	U
144	Special Purpose Supply Systems	A									U
	Total Supply Support Equipment			25		25				25	

Budget Activity 07: Personnel & Command Support Equip

 Training Devices

| 145 | Training Support Equipment | A | | | | | | | | | U |
| 146 | Training and Education Equipment | A | | | | | | | | | U |

 Command Support Equipment

147	Command Support Equipment	A		10,562		10,562				10,562	U
148	Education Support Equipment	A									U
149	Medical Support Equipment	A				5,000				5,000	U
151	Naval MIP Support Equipment	A									U
152	Operating Forces Support Equipment	A									U
153	C4ISR Equipment	A									U
154	Environmental Support Equipment	A									U
155	Physical Security Equipment	A									U
156	Enterprise Information Technology	A									U

 Other

| 159 | Cancelled Account Adjustments | A | | | | | | | | | U |

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		Sec
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
----	----------------	----	--------	----	--------	----	--------	----	--------	----	-
143	First Destination Transportation	A		5,140		5,140				5,140	U
144	Special Purpose Supply Systems	A		295,471		295,471				295,471	U
	Total Supply Support Equipment			316,634		316,634				316,634	

Budget Activity 07: Personnel & Command Support Equip

 Training Devices

| 145 | Training Support Equipment | A | | | | | | | | | U |
| 146 | Training and Education Equipment | A | | 9,504 | | 9,504 | | | | 9,504 | U |

 Command Support Equipment

147	Command Support Equipment	A		47,742		55,242				55,242	U
148	Education Support Equipment	A									U
149	Medical Support Equipment	A		4,128		9,128				9,128	U
151	Naval MIP Support Equipment	A		1,925		1,925				1,925	U
152	Operating Forces Support Equipment	A		4,777		21,033				21,033	U
153	C4ISR Equipment	A		9,073		9,073				9,073	U
154	Environmental Support Equipment	A		21,107		21,107				21,107	U
155	Physical Security Equipment	A		100,906		110,203				110,203	U
156	Enterprise Information Technology	A		67,544		67,544				67,544	U

 Other

| 159 | Cancelled Account Adjustments | A | | | | | | | | | U |

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Sec
143	First Destination Transportation	A		5,572		420		5,992	U
144	Special Purpose Supply Systems	A		482,916				482,916	U
	Total Supply Support Equipment			510,285		584		510,869	

Budget Activity 07: Personnel & Command Support Equip

 Training Devices

| 145 | Training Support Equipment | A | | | | | | | U |
| 146 | Training and Education Equipment | A | | 25,624 | | | | 25,624 | U |

 Command Support Equipment

147	Command Support Equipment	A		59,076		21,650		80,726	U
148	Education Support Equipment	A							U
149	Medical Support Equipment	A		4,383				4,383	U
151	Naval MIP Support Equipment	A		2,030				2,030	U
152	Operating Forces Support Equipment	A		7,500		15,800		23,300	U
153	C4ISR Equipment	A		4,010				4,010	U
154	Environmental Support Equipment	A		23,644		1,000		24,644	U
155	Physical Security Equipment	A		101,982		15,890		117,872	U
156	Enterprise Information Technology	A		19,789				19,789	U

 Other

| 159 | Cancelled Account Adjustments | A | | | | | | | U |

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 PB Request with CR Adj Base Quantity	FY 2017 PB Request with CR Adj Base Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity	FY 2017 Total PB Requests* with CR Adj Base Cost	Sec
----	----------------	-----	--------	----	--------	----	--------	----	-
160	Next Generation Enterprise Service	A		104,642		98,216		98,216	U
999	Classified Programs			33,439		9,915		14,765	U
				----------		----------		----------	
	Total Personnel & Command Support Equip			444,006		364,275		402,178	

Budget Activity 08: Spares and Repair Parts

 Spares and Repair Parts

161	Spares and Repair Parts	A		276,333		199,660		199,660	U
				----------		----------		----------	
	Total Spares and Repair Parts			276,333		199,660		199,660	

Budget Activity 20: Undistributed

 Undistributed

162	Adj to Match Continuing Resolution	A				133,069		133,069	U
				----------		----------		----------	
	Total Undistributed					133,069		133,069	
				----------		----------		----------	
	Total Other Procurement, Navy			6,585,466		6,471,930		6,689,919	

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
----	-----------------	-----	--------	----	--------	----	--------	----	--------	----	-
160	Next Generation Enterprise Service	A									U
999	Classified Programs			1,660		1,660				1,660	U
				----------		----------		----------		----------	
	Total Personnel & Command Support Equip			12,222		17,222				17,222	

Budget Activity 08: Spares and Repair Parts

 Spares and Repair Parts

161	Spares and Repair Parts	A									U
				----------		----------		----------		----------	
	Total Spares and Repair Parts										

Budget Activity 20: Undistributed

 Undistributed

162	Adj to Match Continuing Resolution	A		-112,020		-112,020				-112,020	U
				----------		----------		----------		----------	
	Total Undistributed			-112,020		-112,020				-112,020	
				----------		----------		----------		----------	
	Total Other Procurement, Navy			12,186		22,686				22,686	

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	Sec
160	Next Generation Enterprise Service	A		98,216		98,216				98,216	U
999	Classified Programs			11,575		16,425				16,425	U
	Total Personnel & Command Support Equip			376,497		419,400				419,400	

Budget Activity 08: Spares and Repair Parts

 Spares and Repair Parts

| 161 | Spares and Repair Parts | A | | 199,660 | | 199,660 | | | | 199,660 | U |
| | Total Spares and Repair Parts | | | 199,660 | | 199,660 | | | | 199,660 | |

Budget Activity 20: Undistributed

 Undistributed

162	Adj to Match Continuing Resolution	A		21,049		21,049				21,049	U
	Total Undistributed			21,049		21,049				21,049	
	Total Other Procurement, Navy			6,484,116		6,712,605				6,712,605	

Department of the Navy
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	Sec
160	Next Generation Enterprise Service	A		104,584				104,584	U
999	Classified Programs			23,707		2,200		25,907	U
				----------		----------		----------	
	Total Personnel & Command Support Equip			376,329		56,540		432,869	

Budget Activity 08:   Spares and Repair Parts

 Spares and Repair Parts

161	Spares and Repair Parts	A		278,565		1,178		279,743	U
				----------		----------		----------	
	Total Spares and Repair Parts			278,565		1,178		279,743	

Budget Activity 20:   Undistributed

 Undistributed

162	Adj to Match Continuing Resolution	A							U
				----------		----------		----------	
	Total Undistributed								
				----------		----------		----------	
	Total Other Procurement, Navy			8,277,789		220,059		8,497,848	

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

Appropriation 1810N: Other Procurement, Navy

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

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy											**Date:** May 2017	

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	5.567	5.300	6.191	5.277	0.000	5.277	5.412	5.530	5.653	5.766	5.059	49.755
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	5.567	5.300	6.191	5.277	0.000	5.277	5.412	5.530	5.653	5.766	5.059	49.755
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**5.567**	**5.300**	**6.191**	**5.277**	**0.000**	**5.277**	**5.412**	**5.530**	**5.653**	**5.766**	**5.059**	**49.755**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	0.007	0.007	-	-	-	-	-	-	-	-	0.014
Flyaway Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship gun systems 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.

Justification:

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

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy										**Date:** May 2017	

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	143.688	276.503	320.446	272.359	2.436	274.795	270.120	269.415	313.801	330.194	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	143.688	276.503	320.446	272.359	2.436	274.795	270.120	269.415	313.801	330.194	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**143.688**	**276.503**	**320.446**	**272.359**	**2.436**	**274.795**	**270.120**	**269.415**	**313.801**	**330.194**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	5.307	8.192	4.299	-	4.299	4.552	3.974	4.766	4.209	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 System (VLS), NATO Seasparrow, Rolling Airframe Missile(RAM) Guided Missile Launcher System (GMLS), Anti-Ship Missile Decoy System NULKA, and Over The Horizon Weapon System (OTH WS).

Stalker FY 18- FY 19
Improved situational awareness aboard CVNs and large deck amphibious ships; Accelerate fielding of integrated Stalker/SAws to meet the Fleet need for improved situational awareness.

[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).

Primary operations consist of acquiring targets either manually using radar search or Electro Optic/Infrared capability, or automatically via external or internal designations, generation of fire-control quality track data for engage ability determination, launcher control and missile initialization, queuing of other weapons (e.g. Rolling Airframe Missile) via the Ship Self Defense System (SSDS) or AN/SWY 3/5 Combat System, RIM-7H/M/P SEASPARROW missile and RIM-162D Evolved SEASPARROW Missile (ESSM) firing, target illumination for Missile Guidance and Visual Kill/Survive and Battle Damage Assessments.

NSSMS provides manual or fully automatic operation with provisions for operator intervention or override from the time of target designation to missile away. 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 which employ the surface launch variant of the Sparrow and ESSM. The RIM-7 and RIM-162 missiles use semi-active guidance with target illumination provided by the shipboard MK 9/95 fire control systems. NSSMS MK 57 Mods 12 and higher (ESSM capable) are integrated with the SSDS and become part of the SSDS MK 2 Combat System on CVN 68, LHA 6 and LHD 7-8 class ships. Starting with the Ford Class (CVN 78), the Guided Missile Launching System (GMLS) is segmented from the MK 57 and interfaces directly to the SSDS Combat System; the CVN 78 effort is referred to as NSSMS Objective Configuration OC Phase 1 (OCP 1).

NSSMS Objective Configuration Phase 2 (OCP 2) consists of the segmenting the MK 9 Track Illuminator System (TIS) to interface directly to with SSDS Combat System, as well as eliminating all MK 57 watch stations. This watch station elimination dramatically reduces system life cycle costs for hardware, software, manning, training and maintenance and obsolescence requirements, also allowing the Navy to divest of RIM-7 and associated infrastructure. Recent SSDS FRB activity has also created an incentive to consider MK 9 performance improvements opportunities.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
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		

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.

The NSSMS is a NATO Cooperative Project with 12 participating Governments; Australia, Belgium, Canada, Denmark, Germany, Greece, Norway, The Netherlands, Portugal, Spain, Turkey and the United States. The NSSMS and associated systems of the Cooperative Project were developed, produced and are supported under Department of Defense (DoD) International Memorandums of Understanding (MOU).

Funding provides for (1) equipment modernization, (2) NATO SEASPARROW Objective Configuration (OC) program consisting of segmenting and automating MK 9 Track Illuminator System interfacing directly to the SSDS Combat System, and (3) Stalker Long Range Electro-Optic Sensor System.

The MK 57 NSSMS continues to be evolved to provide credible ship self defense. These equipment modernization upgrades will result in the ability of the MK 57 System to support future mission requirements. NSSMS MK 57 Mods 12 and higher (ESSM capable) are integrated with the SSDS and become part of the SSDS MK 2 Combat System.

The NATO SEASPARROW OC program consists of segmenting and automating the MK 9 Track Illuminator System (TIS) interfacing directly to the SSDS Combat System, eliminating all MK 57 watch stations, reducing system hardware, providing annual cost avoidance/savings, avoiding non-recurring engineering associated with integrating with CDS/CPS and allowing the Navy to divest of RIM-7 and associated infrastructure. Recent SSDS FRB activity has also created an incentive to consider MK 9 performance improvements opportunities. MK 132 Modernization (above deck launcher portion of MK 29 GMLS) allows for the upgrades necessary to address a variety of issues with this legacy equipment, including Grade A shock deficiencies with the current design when employed with ESSM, missile loading issues, missile environmental issues and future ESSM capability. The FY13 funding allocation on the Solid State Transmitter (SSTx) funding line is earmarked to support MK 9 improvements/modernization being driven by the FY12 SSDS combat system wholeness FRB/FLCIP initiate. The funding will be used to procure 1 set of MK 9 improvements/modernization related qualification hardware and associated engineering efforts. In contrast, the SSTx funding shown for FY14 and out will be used to procure production SSTx units.

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.

[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 MOUs/MOAs (the latest was signed on 19 March 2013) executed 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 Tech Refresh/Safety/IA ORDALTS which are required to field RAM BLK 2A capabilities for increased performance improvements bringing amplified fire power to the fleet. The RAM Fire Power ORDALT increases the number of missiles fired to meet self defense PRA requirements against evolving threat raid scenarios. Without this ORDALT, L-class and CVNs will not be able to defend against emergent raid scenarios. The firepower ORDALT also 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 to defend against Anti-Ship Cruise Missiles (ASCM). SSDS integrates a diverse set of fire control loop sensors and weapons, and C4I systems for each ship class (CVN68/78, LHA6, LHD1, LPD17,

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	Date: May 2017

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

and LSD41/49 ship classes). SSDS MK2 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 is 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 41/49 class, as fleet modernization initiatives.

SSDS MK2 integrates new combat system warfighting capabilities and improvements on 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 baselines are required every four years to refresh the Commercial-Off-The-Shelf (COTS) assemblies to sustain system production and to support the incorporation of new ACB/war-fighting capabilities. Each individual ship is planned for a Technology Insertion upgrade on an eight to ten year interval to replace obsolescent COTS hardware and support the fielding of the capabilities. Technology refresh of individual COTS assemblies that are unprocurable or unsupported is handled on a case basis.

SHIP SELF DEFENSE SYSTEM (SSDS) MK 1 provides ship self defense capabilities against Anti-Ship Cruise Missiles (ASCM) for LSD 41/49 class ships. It integrates several existing stand-alone sensor and Anti-Air Warfare weapons systems to provide an automated detect-to-engage capability against low flying, high speed ASCMs with low radar cross sections in the littoral environment. System design emphasizes physically distributed non-developmental items, commercial standards and computer program reuse in an open system architecture computer network. It includes a command table that uses components of the Navy's AN/UYQ-70 standard display for human-system interface, commercially available local area network access units and circuit cards, and commercially available fiber optic cabling. SSDS MK 1 requires a COTS obsolescence technology insertion and transitioned to an SSDS MK2 Open Architecture Computing Environment (OACE)beginning with FY10 procurement for shore sites and lead ship installation in the LSD 50 in FY14.

SHIP SELF DEFENSE SYSTEM (SSDS) MK 2 provides Advance Combat Direction System (ACDS) functionality and SSDS MK1 capabilities with additional weapon and sensor elements. It is integrated with Cooperative Engagement Capability (CEC) and tactical data links to provide joint interoperability for Aircraft Carriers and Amphibious 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 MK2 increases operational capabilities, improves combat readiness and Strike Group and Expeditionary Strike Group interoperability. SSDS MK 2 equips back-fit LHDs and CV(N)s 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 System 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, at Naval Surface Warfare Center Dahlgren. FY16-FY22 includes the procurement of COTS Conversion Kits for CVNs, LPDs, LHDs, LHAs and LSDs, and 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 support Navy Open Architecture computing environment standards to facilitate software reuse. FY13-FY18 kits are based on a Technology Insertion - 12 (TI-12) and Technology Insertion - 12 Hybrid (TI-12H) configurations. FY16-FY21 transitions to the TI-16 configuration with procurement for shore sites starting in FY16 and procurement for ships starting in FY19. FY21-22 transitions to the TI-22 configuration. Due to prior year budget constraints, the TI-16 hardware development, production and associated ACB-12 software migration have been delayed. In order to support critical Ship Combat System modernization installation schedules involving many other CS elements, production of the TI-12 configuration has been extended for SSDS MK 2 with technology refresh of un-procurable components (designated TI-12H). This has impacted the FY16 and FY17 execution and FY18 plans. 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 FY18-FY20, (UQ005)includes procurement of Cyber Security Equipment in support of fielding of Cyber Security capabilities as part of SSDS MK-2 Ship Modernization. In FY18, equipment will be procured for SSDS Shore Sites Integration and test of Cyber Security equipment to support Cyber Security Wholeness

P40A exhibits for SSDS includes the following:

[P40A - 3 (SSDS) / UQ002 - Production Engineering support for SSDS hardware.
[P40A - 3 (SSDS) / UQ003 - Engineering Change Proposal (ECP) and Ship Change Document (SCD) for SSDS hardware.
[P40A - 3 (SSDS) / UQ004 - Training Documentation Changes for SSDS hardware.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
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		

[P40A - 3 (SSDS) / UQ005A - COTS Engineering / Obsolescence Kits/Field Changes for SSDS hardware.
[P40A - 3 (SSDS) / UQ007 - Combat System Ships Qualification Trials (CSSQT)

Combat System Ships Qualification Trials (CSSQTs) are 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. PB17 only included CSSQT for LHD1 Class CS/SSDS MK2 upgrades. PB18 includes the CSSQT funding for all of the CVN and Amphibious class ships that will undergo CS/SSDS MK2 upgrades.

[P40A - 3 (SSDS) / UQ008 - Combat System Documentation & Support
Provides for generation, update, and validation of CS documentation as a result of CS configuration changes during ship modernization. This includes the following Ship Selected Records (SSRs)for CVN, LHD, LHA, LPD 17 and LSD 41/49 Class Ships. PB18 includes CS documentation and support for all of the CVN and Amphibious class ships that will undergo CSI SDS MK2 upgrades.
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.
CS 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 Amphibious class ships, head-quarter's support, and liaison with local Regional Maintenance Centers (RMC), CS Waterfront Engineers, and NSWC PHD support for Installation Coordination Teams.

P3A exhibits for SSDS includes the following:
[P3A - 3 (SSDS) / UQ005B - Procurement and installation of SSDS Open Architecture Computing Environment (OACE) COTS conversion Kits and upgrade kits for CVN, LHD, LHA, LPD, and LSD class ships and shore sites.

[P40A - 3 / UQ007 - Combat System Ship Qualification Trial (CSSQT)]: For UQ007-PB17 only included CSSQT funding for LHD1 Class CS/SSDS MK2 upgrades. PB18 includes the CSSQT funding for all of the CVN and Amphibious class ships that will undergo CS/SSDS MK2 upgrades. FY18 and FY19 each include CSSQT for one ship. FY20-FY22 includes 3,4, and 3 CSSQTs respectively. The cost of the CSSQT varies across ship classes based on the CS weapons configuration (LPD-CS with RAM/MK46, LSD-CS with RAM/CIWS, CVN/LHA/LHD-CS with RAM/ESSM/CIWS).

[P40A - 3 / UQ008 - Combat System Documentation & Support]: PB17 only included CS Documentation and Support for the LHD1 Class CS/SSDS MK2 upgrades. PB18 includes the CS Documentation and Support for all of the CVN and Amphibious class ships that will undergo CS/SSDS MK2 upgrades. FY18 includes 2 ships representing 2 ship class CS configurations. FY19 includes 5 ships encompassing 3 ship class CS configurations. The waterfront and modernization support in UQ008 also increases between FY17 and FY18 and out to include all of the ships undergoing modernization.

[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 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.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

L7012: Provides Radar Refurbishment to support AEGIS DDG 53-78 in support of AEGIS BL 5.3 Update planned to field in FY18.
L7014: Provides SPY 1D/DV radar enhancements for AEGIS DDGs to improve radar reliability
L7015: AEGIS Integration and Installation support for 4 DDG to receive SEARAM upgrade
L7600: Provides funding to complete installation of ORDALTS and other Ship Changes designed to improve the readiness of the AEGIS Combat System.

[P40A - 5 / 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 - 6 / ANTI SHIP MISSILE DECOY SYSTEM]: 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 Decoy Launching System (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. NULKA has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation on CVNs began in FY14 and will be installed on nine carriers. The DLF-3B (MK 59) decoy systems responded to an urgent operational need by providing an initial limited interim decoy capability to the Fleet. The Advanced Decoy Architecture Project (ADAP) is EW payload developed under an ONR program that targets specific threats that the current payload on the Nulka decoy does not. The ADAP payload provides an advanced Electronic Warfare (EW) transmitter and increased signal processing capability.

The Advanced Offboard EW (AOEW) program is a long duration off-board decoy with onboard systems for EW coordination to counter identified EW gaps (additional details classified) in response to an urgent operational need from the Fleet that has been approved by the CNO for execution. AOEW procurement includes engineering mass models, AN/ALQ-248 pods, maintenance benches, installation, and production support. AOEW Mass Models are inert, non-functional units with the same weight, mass distribution, and mounting points. Mass models will be used for flight certification, jettison testing, and training.

[P40A - 7 / OTH PROCUREMENT]: The Over The Horizon Weapon System (OTH WS) provides the LCS with long range anti-surface offensive capability against surface combatants. 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.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017

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

					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Exhibits Schedule									
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	NATO SEASPARROW				- / 22.445	- / 37.280	- / 18.171	- / 39.421	- / -	- / 39.421
P-40a	RAM GMLS				- / 3.856	- / 3.301	- / 1.727	- / 1.138	- / -	- / 1.138
P-40a	Ship Self Defense System				- / 4.844	- / 12.459	- / 12.187	- / 11.316	- / -	- / 11.316
P-40a	AEGIS Support Equipment				- / 59.427	- / 104.967	- / 155.040	- / 76.236	- / -	- / 76.236
P-40a	Vertical Launch Systems				- / 0.728	- / 0.707	- / 0.623	- / 0.660	- / -	- / 0.660
P-40a	ANTI SHIP MISSILE DECOY SYSTEM				- / 1.778	- / 44.773	- / 49.544	- / 52.317	- / 2.436	- / 54.753
P-40a	UR006 RAM MK-49 GMLS ORDALTS				- / 0.517	- / 6.478	- / 6.448	- / 6.662	- / 0.000	- / 6.662
P-40a	VV001 NULKA SYSTEMS				- / 10.194	- / 8.439	- / 6.333	- / 6.533	- / 0.000	- / 6.533
P-40a	VV003 ENGINEERING CHANGES AND LOGISTICS SUPPORT				- / 3.238	- / 4.574	- / 5.453	- / 5.121	- / 0.000	- / 5.121
P-40a	VV831 DLF-3B SYSTEMS				- / 20.546	- / 0.005	- / 1.462	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / NATO SEASPARROW (NSSMS Mk 57)				- / 1.193	- / 4.570	- / 20.726	- / 11.185	- / 0.000	- / 11.185
P-3a	3 / UQ005B - SSDS COTS CONVERSION KITS (TBD)				- / 14.922	- / 48.950	- / 42.732	- / 61.770	- / 0.000	- / 61.770
P-40	**Total Gross/Weapon System Cost**				**- / 143.688**	**- / 276.503**	**- / 320.446**	**- / 272.359**	**- / 2.436**	**- / 274.795**

*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.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy				**Date:** May 2017

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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	A		-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) MISSILE LAUNCHER UPGRADE	A		-	-	-	-	-	31.100	-	-	7.240	-	-	14.200	-	-	-	-	-	14.200
1.3) PRODUCTION SUPPORT	A		-	-	1.500	-	-	1.500	-	-	1.500	-	-	1.500	-	-	-	-	-	1.500
1.5) LHD UPGRADE (1)	A		-	-	9.735	-	-	4.680	-	-	9.431	-	-	18.053	-	-	-	-	-	18.053
Subtotal: 1) EQUIPMENT MODERNIZATION - US005			**-**	**-**	**21.235**	**-**	**-**	**37.280**	**-**	**-**	**18.171**	**-**	**-**	**33.753**	**-**	**-**	**-**	**-**	**-**	**33.753**
2) STALKER - US005																				
2.1) STALKER PRODUCTION SUPPORT	A		-	-	1.210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) STALKER - US005			**-**	**-**	**1.210**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
3) I-Stalker - US005																				
3.1) I-Stalker Support	A		-	-	-	-	-	-	-	-	-	-	-	0.615	-	-	-	-	-	0.615
3.2) I-Stalker Kits	A		-	-	-	-	-	-	-	-	-	650,000.00	6	3.900	-	-	-	650,000.00	6	3.900
3.3) I-Stalker Install	A		-	-	-	-	-	-	-	-	-	-	-	1.153	-	-	-	-	-	1.153
Subtotal: 3) I-Stalker - US005			**-**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5.668**	**-**	**-**	**-**	**-**	**-**	**5.668**
Total			**-**	**-**	**22.445**	**-**	**-**	**37.280**	**-**	**-**	**18.171**	**-**	**-**	**39.421**	**-**	**-**	**-**	**-**	**-**	**39.421**

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

Footnotes:

(1) (1) MLU increases in FY18, 19 coincidence with significant Govovernment qualification, integration and test effort in those years. (2) LHD upgrade increases in FY17, 18 coincide with NSSM depot efforts in support of LHD upgrade avails in FY18, 19, 20.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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 [2]

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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 [3]																				
1.1) UR006 RAM MK-49 GMLS ORDALTS [4]	A		-	-	0.156	-	-	1.501	-	-	1.637	-	-	1.004	-	-	-	-	-	1.004
Subtotal: 1) UR006 RAM MK-49 GMLS ORDALTS			**-**	**-**	**0.156**	**-**	**-**	**1.501**	**-**	**-**	**1.637**	**-**	**-**	**1.004**	**-**	**-**	**-**	**-**	**-**	**1.004**
2) UR901 Systems Improvements [5]																				
2.1) UR901 System Improvement	A		-	-	3.700	-	-	1.800	-	-	0.090	-	-	0.134	-	-	-	-	-	0.134
Subtotal: 2) UR901 Systems Improvements			**-**	**-**	**3.700**	**-**	**-**	**1.800**	**-**	**-**	**0.090**	**-**	**-**	**0.134**	**-**	**-**	**-**	**-**	**-**	**0.134**
Total			**-**	**-**	**3.856**	**-**	**-**	**3.301**	**-**	**-**	**1.727**	**-**	**-**	**1.138**	**-**	**-**	**-**	**-**	**-**	**1.138**

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

Footnotes:

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

[3] 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). RAM ECP funds in FY15-FY17 are for the Ethernet upgrade which provides replacement of the Legacy Fiber Distributed Data Interface (FDDI) Combat System interface with an Ethernet Combat System interface. The Ethernet interface is required for the RAM launcher to operate with the SSDS MK Capstone Combat System and the RAM Block 2A missile without their upgrade, RAM Ships will not have the RAM Block 2A capability that FCLIP (Fire Control Loop Improvement Program) brings. LHD self defense will suffer without RAM integration as these ships will only be unable to fire either RAM Block 1 or RAM Block 2 missiles in manual mode. Funding increased in FY19-FY21 to support RAM Blk 2B Firepower ORDALTS to meet self defense PRA requirements against evolving threat raid scenarios.

[4] Production support increases due to IA, Obsolescence and Safety Support.

[5] Provides for procurement and installation of critical RAM system improvement and safety ORDALTs

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		**Date:** May 2017
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 [6]

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) [7]																				
1.1) UQ002 - SSDS Production Support	A		-	-	1.679	-	-	1.708	-	-	1.522	-	-	1.548	-	-	-	-	-	1.548
1.2) UQ003 - SSDS ECP / SCD	A		-	-	0.192	-	-	0.195	-	-	0.199	-	-	0.202	-	-	-	-	-	0.202
1.3) UQ004 - SSDS Training	A		-	-	0.701	-	-	0.713	-	-	0.725	-	-	0.737	-	-	-	-	-	0.737
1.4) UQ005A - SSDS COTS Eng/ Obsolescence Kits	A		-	-	2.272	-	-	4.643	-	-	2.756	-	-	2.945	-	-	-	-	-	2.945
1.5) UQ007 - Combat System Ship Qualification Trial (CSSQT)	A		-	-	-	-	-	5.200	-	-	4.603	-	-	3.154	-	-	-	-	-	3.154
1.6) UQ008 - Combat System Documentation & Support	A		-	-	-	-	-	-	-	-	2.382	-	-	2.730	-	-	-	-	-	2.730
Subtotal: 1) Ship Self Defense System (SSDS)			*-*	*-*	*4.844*	*-*	*-*	*12.459*	*-*	*-*	*12.187*	*-*	*-*	*11.316*	*-*	*-*	*-*	*-*	*-*	*11.316*
Total			**-**	**-**	**4.844**	**-**	**-**	**12.459**	**-**	**-**	**12.187**	**-**	**-**	**11.316**	**-**	**-**	**-**	**-**	**-**	**11.316**

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

Footnotes:

[6] See P-40 Description (on page 3) for the description of each item listed in P-40a (UQ002, UQ003, UQ004, UQ005A, UQ007, and UQ008).

[7] In FY2016, $5.2M of SSDS funds were reprogramed from UQ005B - COTS Upgrade Kits for Shore Sites to UQ007 - CSSQT to support essential CSSQT requirements for LSD Class SSDS MK2/Combat System Upgrade in LSD45 and LSD52. (7) In FY2016, $2.082M of SSDS funds were re-designated from UQ005B - COTS Upgrade Kits for shore sites to UQ005A - COTS Engineering/Obsolescence Kits to fund critical COTS assemblies/kits for Diminishing Manufacturing Source (DMS) parts to extend the production and fielding of the TI-12 configuration with the TI-12H configuration, and to fund an emergent requirement for COTS High Speed Guard equipment for the Self Defense Test Ship CVN78 SSDS configuration for network Cyber Security Protection. (8)In FY2017, $1.431M of SSDS funds were re-designated from UQ005B - COTS Conversion Kits to UQ007 for the completion of CSSQT in the LSD Class ships (LSD51 and LSD52) in addition to the conduct of CSSQT in the LHD2. (9)In FY2017, $0.805M of SSDS funds were re-designated from UQ005B - COTS Conversion Kits to UQ008 for CS Documentation and support for the LSD Class Ships (LSD49 and LSD52) in addition to the LHD2 requirements. (10) In FY17, two TI-12H COTS Conversion Kits in UQ005B for ships ((1) for CVN and (1) for L-Class) were re-designated to shore sites due to a combination of factors, including the reduction in shore site procurement in UQ005B in FY16 and FY17 for higher priority requirements (CSSQT, DMS parts and cyber security equipment), and the impact of the delayed FY17 equipment procurement on the availability schedules for the two ships.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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 (8)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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		-	-	4.085	-	-	4.038	-	-	4.092	-	-	4.086	-	-	-	-	-	4.086
1.2) L7003 - Integrated Warfare Systems Laboratory (9)	A		-	-	1.317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) L7006 - Surface Combat Systems Center Equipment	A		-	-	12.834	-	-	56.560	-	-	36.884	-	-	7.034	-	-	-	-	-	7.034
1.4) L7007 - Aegis Training and Readiness Center Upgrade (10)	A		-	-	19.386	-	-	11.312	-	-	28.667	-	-	5.488	-	-	-	-	-	5.488
1.5) L7011 - Aegis Weapon System Ship Change Procurement	A		-	-	13.048	-	-	19.390	-	-	11.583	-	-	12.684	-	-	-	-	-	12.684
1.6) L7012 - SPY Radar Refurbishment (11)	A		-	-	-	-	-	-	-	-	40.200	-	-	24.996	-	-	-	-	-	24.996
1.7) L7014 - SPY 1D/DV Radar Enhancements	A		-	-	-	-	-	-	-	-	24.000	-	-	15.700	-	-	-	-	-	15.700
1.10) L7600 - Aegis Support Equipment Installation	A		-	-	8.757	-	-	13.667	-	-	9.614	-	-	6.248	-	-	-	-	-	6.248
Subtotal: 1) Aegis Support Equipment			-	-	59.427	-	-	104.967	-	-	155.040	-	-	76.236	-	-	-	-	-	76.236
Total			-	-	59.427	-	-	104.967	-	-	155.040	-	-	76.236	-	-	-	-	-	76.236

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

Footnotes:

(8) 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 SPY Refurbishments in support of AEGIS BL 5.3.X Upgrade planned to field in FY18. L7014: AEGIS Weapon System Procurements to support AEGIS SPY-1D/DV Enhancements for AEGIS DDGs L7015: AEGIS Integration and Installation support for 4 DDG to receive SEARAM upgrade L7027: AEGIS Software License Procurements to support Shore Facilities and In-Service Ship L7600: AEGIS Installation support for approved ship changes

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

(10) FY16 to FY17 increase is to procure AEGIS 20 Hardware to support AEGIS ACB 20 Technician and Operator Training to support fleet introduction of DDG 51 FLT III.

(11) Establish budget line to procure SPY Radar Refurbishments in support of AEGIS BL 5.3.X Upgrades planned for fielding in FY18. Procures 1 SPY Array set to establish rotatable pools to support installation timelines.

Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		**Date:** May 2017
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 Unit Cost ($)	Qty (Each)	Total Cost ($ M)	FY 2016 Unit Cost ($)	Qty (Each)	Total Cost ($ M)	FY 2017 Unit Cost ($)	Qty (Each)	Total Cost ($ M)	FY 2018 Base Unit Cost ($)	Qty (Each)	Total Cost ($ M)	FY 2018 OCO Unit Cost ($)	Qty (Each)	Total Cost ($ M)	FY 2018 Total Unit Cost ($)	Qty (Each)	Total Cost ($ M)
1) Vertical Launch Systems																				
1.1) VLS ORDALTS	A		-	-	0.469	-	-	0.453	-	-	0.392	-	-	0.422	-	-	-	-	-	0.422
1.2) VLS PRODUCTION ENGINEERING	A		-	-	0.205	-	-	0.201	-	-	0.177	-	-	0.184	-	-	-	-	-	0.184
Subtotal: 1) Vertical Launch Systems			*-*	*-*	*0.674*	*-*	*-*	*0.654*	*-*	*-*	*0.569*	*-*	*-*	*0.606*	*-*	*-*	*-*	*-*	*-*	*0.606*
2) 5A5IN Install Equipment N86 [12]																				
2.1) 5A5IN Install Equipment N86	A		-	-	0.054	-	-	0.053	-	-	0.054	-	-	0.054	-	-	-	-	-	0.054
Subtotal: 2) 5A5IN Install Equipment N86			*-*	*-*	*0.054*	*-*	*-*	*0.053*	*-*	*-*	*0.054*	*-*	*-*	*0.054*	*-*	*-*	*-*	*-*	*-*	*0.054*
Total			**-**	**-**	**0.728**	**-**	**-**	**0.707**	**-**	**-**	**0.623**	**-**	**-**	**0.660**	**-**	**-**	**-**	**-**	**-**	**0.660**

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

Footnotes:
[12] VLS ORDALT Installation

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy				Date: May 2017	

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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 [13]																				
1.1) NULKA DECOYS	A		-	-	-	1,773K	12	21.271	1,456K	21	30.566	1,215K	41	49.815	1,218K	2	2.436	1,215K	43	52.251
Subtotal: 1) VV002 - NULKA DECOYS			*-*	*-*	*0.000*	*-*	*-*	*21.271*	*-*	*-*	*30.566*	*-*	*-*	*49.815*	*-*	*-*	*2.436*	*-*	*-*	*52.251*
2) VV830 - PRODUCTION ENGINEERING [14]																				
2.1) PRODUCTION ENGINEERING	A		-	-	-	-	-	4.673	-	-	1.778	-	-	2.502	-	-	-	-	-	2.502
Subtotal: 2) VV830 - PRODUCTION ENGINEERING			*-*	*-*	*0.000*	*-*	*-*	*4.673*	*-*	*-*	*1.778*	*-*	*-*	*2.502*	*-*	*-*	*-*	*-*	*-*	*2.502*
3) VV832 - DLF-3B DECOYS																				
3.1) VV832 DLF-3B DECOYS	A		-	-	0.998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) VV832 - DLF-3B DECOYS			*-*	*-*	*0.998*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
4) VV833 - DLF-3B LOGISTICS/PRODUCTION SUPPORT																				
4.1) VV833 DLF-3B LOGISTICS/ PRODUCTION SUPPORT	A		-	-	0.780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) VV833 - DLF-3B LOGISTICS/PRODUCTION SUPPORT			*-*	*-*	*0.780*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
5) VV004 - ADAP PAYLOAD [15]																				
5.1) ADAP PAYLOAD	A		-	-	-	537,970.00	35	18.829	452,632.00	38	17.200	-	-	-	-	-	-	-	-	-
Subtotal: 5) VV004 - ADAP PAYLOAD			*-*	*-*	*0.000*	*-*	*-*	*18.829*	*-*	*-*	*17.200*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
Total			**-**	**-**	**1.778**	**-**	**-**	**44.773**	**-**	**-**	**49.544**	**-**	**-**	**52.317**	**-**	**-**	**2.436**	**-**	**-**	**54.753**

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

Footnotes:

[13] VV002: Procurement of MK 234 NULKA Decoys. The FY16 unit cost ($1773K) is based on a total procurement of 12 decoys (12 procured with 5231/OPN and 0 procured by Australia). The FY17 unit cost ($1456K) is based on a total procurement of 33 decoys (21 procured with 5231/OPN and 12 procured by Australia). The FY18 unit cost ($1215K) is based on a total procurement of 43 decoys (31 procured with 5231/OPN and 12 procured by Australia. Increase in FY18 VV002 decoys procurement (PB17) due to budget increase of $2.4M to replenish decoys expended in defense of USS MASON in October 2016.

[14] VV830: Production Engineering support to the MK 234 NULKA Decoy.

[15] VV001/VV004: Procurement of 38 additional ADAP decoys in FY17 to meet Fleet capability gaps was determined to be a higher priority than procuring 17 Nulka decoys.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																			Date: May 2017		

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3
P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment
Aggregated Items Title: UR006 RAM MK-49 GMLS ORDALTS

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
UR006 RAM MK-49 GMLS ORDALTS -- Procurement (16)	A		0.00	14	0.000	646,000.00	8	5.168	595,875.00	8	4.767	625,000.00	8	5.000	-	-	-	625,000.00	8	5.000
UR006 RAM MK-49 GMLS ORDALTS -- Installation	A		-	-	0.517	-	-	1.310	-	-	1.681	-	-	1.662	-	-	-	-	-	1.662
Subtotal: B Kits/Recurrring			*-*	*-*	*0.517*	*-*	*-*	*6.478*	*-*	*-*	*6.448*	*-*	*-*	*6.662*	*-*	*-*	*-*	*-*	*-*	*6.662*
Total			-	-	0.517	-	-	6.478	-	-	6.448	-	-	6.662	-	-	0.000	-	-	6.662

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

Remarks:
Models of Systems Affected: MK 49 GMLS
Type Modification: NON-FMP Install

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.

Procurement and installation of RAM MK 49 GMLS critical ORDALTS on CVN, LSD, LPD, LHA, LHD and LCS class ships.

Footnotes:
(16) MOD 1 to MOD 3 procurements shown in prior years were procured under BLI 5238 and are being installed under BLI 5231 due to the LSD schedule and rephrasing.   FY16-FY18 procurements are for Tech Refresh/Safety/IA ORDALTS to include a MAM kit per ship set. The Tech Refresh launcher ORDALTS are required to field RAM BLK 2A capabilities for increased performance improvements bringing amplified firepower to the fleet.   FY19-FY21 procurements are for the RAM Blk 2B Firepower ORDALTS. These ORDALTS are required to meet self defense PRA requirements against evolving threat raid scenarios.   Installation costs are associated with Mod 1 to Mod 3 ORDALT installs, Tech Refresh/Safety/IA ORDALT and Firepower ORDALT installations. Installs noted below reflect ship sets (QTY 2 per ship): FY16: 2 MOD 1 to MOD 3 ORDALT installs; FY17: 1 MOD 1 to MOD 3 ORDALT install and 4 Ships Tech Refresh/Safety/IA ORDALT Installs; FY18: 1 MOD 1 to MOD 3 ORDALT install and 4 Ships Tech Refresh/Safety/IA ORDALT Installs; FY19: 4 Ships Tech Refresh/Safety/IA ORDALT Installs; FY20: 1 MOD 1 to MOD 3 ORDALT installs; FY21: 4 RAM Blk 2B Firepower ORDALT Installs; FY22: 4 RAM Blk 2B Firepower ORDALT Installs

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy	**Date:** May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** VV001 NULKA SYSTEMS

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
NULKA SYSTEMS -- Procurement [17]	A		141,666.67	3	0.425	1,178K	1	1.178	1,225K	1	1.225	1,274K	1	1.274	-	-	-	1,274K	1	1.274
NULKA SYSTEMS -- Installation	A		-	-	9.769	-	-	7.261	-	-	5.108	-	-	5.259	-	-	-	-	-	5.259
Subtotal: B Kits/Recurrring			*-*	*-*	*10.194*	*-*	*-*	*8.439*	*-*	*-*	*6.333*	*-*	*-*	*6.533*	*-*	*-*	*-*	*-*	*-*	*6.533*
Total			-	-	10.194	-	-	8.439	-	-	6.333	-	-	6.533	-	-	0.000	-	-	6.533

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

Remarks:
Models of Systems Affected: MK 53 DLS

VV001: Procurement of MK 53 Decoy Launching Systems.
Program funds the procurement and installation of the MK53 NULKA System.

Footnotes:
[17] FY16 system procurement decreased from 1.411 (PB17) to 1.178 due to actual contract cost.
FY16 installation cost increase is due to increased installation costs on CVN 75.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** VV003 ENGINEERING CHANGES AND LOGISTICS SUPPORT

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)	Unit Cost ($)	Qty (Each)	Total Cost ($ M)
Support Cost																				
ENGINEERING CHANGES	A		-	-	-	-	-	1.035	-	-	1.256	-	-	1.433	-	-	-	-	-	1.433
LOGISTICS/ PRODUCTION SUPPORT	A		-	-	3.238	-	-	3.539	-	-	4.197	-	-	3.688	-	-	-	-	-	3.688
Subtotal: Support Cost			*-*	*-*	*3.238*	*-*	*-*	*4.574*	*-*	*-*	*5.453*	*-*	*-*	*5.121*	*-*	*-*	*-*	*-*	*-*	*5.121*
Total			**-**	**-**	**3.238**	**-**	**-**	**4.574**	**-**	**-**	**5.453**	**-**	**-**	**5.121**	**-**	**-**	**0.000**	**-**	**-**	**5.121**

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

Remarks:
Models of Systems Affected: DLS/EMC ORDALT KITS

VV003: Engineering Changes and Logistics Support - 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.
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.
Installation of Ordalt 73014 ($400K) is included for the DLPP (Decoy Launch Processor Program) 6_3 upgrade and is included in Cost Code VVINS (Installation of Equipment).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		**Date:** May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	**P-1 Line Item Number / Title:** 5231 / Ship Missile Support Equipment	**Aggregated Items Title:** VV831 DLF-3B SYSTEMS

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Non-Recurrring																				
DLF-3B SYSTEMS -- Installation	A		-	-	20.546	-	-	0.005	-	-	1.462	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Non-Recurrring			**-**	**-**	**20.546**	**-**	**-**	**0.005**	**-**	**-**	**1.462**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**20.546**	**-**	**-**	**0.005**	**-**	**-**	**1.462**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

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

Remarks:
Models of Systems Affected: DLF-3B DECOY SYSTEMS

Procurement of the commercially available DLF-3B decoy systems. A ship system consists of 6 decoys, 6 launch tubes, and 1 control panel.

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Exhibit P-3a, Individual Modification: FY 2018 Navy				**Date:** May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	1.193	4.570	20.726	11.185	0.000	11.185
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	1.193	4.570	20.726	11.185	0.000	11.185
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**1.193**	**4.570**	**20.726**	**11.185**	**0.000**	**11.185**
(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 procured on the P3a makes up the NSSMS Mk 57 Mod 14 (L class) systems that are planned 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) Transmitter Upgrades (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.

Overall acquisition lead time for the Radar group is comprised of the contract award-to-delivery time of the new NSSMS components to the NSSMS depot, where these items are incorporated into existing equipment, tested, and delivered to the shipyard for ship installation. Production lead time for SLCs and IRPs is 18 months ACA; for SSTX ORDALTS lead time is 24 months ACA. It then takes the NSSMS depot 12 months to overhaul existing equipment and install newly procured upgrades into existing Radar group components, depending upon overall NSSMS depot workload. The nominal timeline for delivering an upgraded NSSMS shipset to the shipyard is 36 ACA months.

ESSM Blk 2 launcher (MLU) backfit installations to CVNs and selected L class ships will occur in FY22-25.

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Exhibit P-3a, Individual Modification: FY 2018 Navy   **Date:** May 2017

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 Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total Qty (Each) / Total Cost ($ M)
Procurement						
Modification Item 1 of 2: Radar Group						
A Kits						
Non-Recurring						
1.1.1) SOLID STATE TRANSMITTER UPGRADE (SSTX) - NonOrganic [18]	2 / 0.000	- / -	2 / 7.480	- / -	- / -	- / -
1.1.2) INTEGRATED RADAR PROCESSOR (IRP) - NonOrganic [19]	4 / 0.000	- / -	4 / 2.149	2 / 1.085	- / -	2 / 1.085
1.1.3) TEST SUPPORT - Organic	- / -	- / -	- / 0.030	- / 0.034	- / -	- / 0.034
1.1.4) COTS OBSOLESCENCE - Organic	- / -	- / -	- / 0.297	- / 0.315	- / -	- / 0.315
1.1.5) ECP'S - Organic	- / -	- / -	- / 0.030	- / 0.034	- / -	- / 0.034
Subtotal: Non-Recurring	- / 0.000	- / -	- / 9.986	- / 1.468	- / -	- / 1.468
Subtotal: Radar Group	6 / 0.000	- / -	6 / 9.986	2 / 1.468	- / -	2 / 1.468
Modification Item 2 of 2: Launcher Group						
B Kits						
Non-Recurring						
2.1.1) ESSM ORDALT - NonOrganic [20]	6 / 0.000	- / -	4 / 5.042	2 / 2.720	- / -	2 / 2.720
2.1.2) SYSTEM LAUNCHER/CONTROLLER (SLC) - NonOrganic [21]	6 / 0.000	- / -	4 / 2.148	2 / 1.095	- / -	2 / 1.095
2.1.3) TEST SUPPORT - Organic	- / -	- / -	- / 0.030	- / 0.034	- / -	- / 0.034
2.1.4) ECP'S - Organic	- / -	- / -	- / 0.260	- / 0.280	- / -	- / 0.280
Subtotal: Non-Recurring	- / 0.000	- / -	- / 7.480	- / 4.129	- / -	- / 4.129
Subtotal: Launcher Group	12 / 0.000	- / -	8 / 7.480	4 / 4.129	- / -	4 / 4.129
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / 17.466	- / 5.597	- / -	- / 5.597
Support (All Modification Items)						
3.1) Launcher Support	- / -	- / 1.470	- / 1.470	- / 1.470	- / -	- / 1.470
4.1) Radar Support	- / -	- / 0.500	- / 1.490	- / 1.490	- / -	- / 1.490
Subtotal: Support	- / 0.000	- / 1.970	- / 2.960	- / 2.960	- / -	- / 2.960
Installation						
Modification Item 1 of 2: Radar Group	- / 0.000	- / 0.866	- / 0.100	- / 0.899	- / 0.000	- / 0.899
Modification Item 2 of 2: Launcher Group	- / 1.193	- / 1.734	- / 0.200	- / 1.729	- / 0.000	- / 1.729
Subtotal: Installation	- / 1.193	- / 2.600	- / 0.300	- / 2.628	- / -	- / 2.628
Total						

Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Total Cost (Procurement + Support + Installation)	1.193	4.570	20.726	11.185	0.000	11.185

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Modification Item 1 of 2: Radar Group

Manufacturer Information

Manufacturer Name: Raytheon	Manufacturer Location: Portsmouth, RI
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 24

Dates	**FY 2016**	**FY 2017**	**FY 2018**
Contract Dates		Aug 2017	
Delivery Dates		Aug 2019	

Installation Information

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

Installation Schedule

	PYS	**FY 2016**				**FY 2017**				**FY 2018**			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-

Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Integated Radar Processor (IRP)

Installation Cost	**Prior Years** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	2 / 0.866	- / -	2 / 0.899	0 / 0.000	2 / 0.899
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	0 / 0.100	- / -	- / -	- / -
Total	- / -	2 / 0.866	0 / 0.100	2 / 0.899	0 / 0.000	2 / 0.899

Installation Schedule

	PYS	**FY 2016**				**FY 2017**				**FY 2018**			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
In	-	-	2	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	-	-	2	-	-	-	-	-

Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2: Launcher Group

Manufacturer Information

Manufacturer Name: Raytheon	Manufacturer Location: Portsmouth, RI
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 17

Dates	**FY 2016**	**FY 2017**	**FY 2018**
Contract Dates		Aug 2017	Aug 2018
Delivery Dates		Mar 2019	Mar 2020

Installation Information

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

Installation Cost	**Prior Years** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 0.633	2 / 0.868	- / -	2 / 0.920	0 / 0.000	2 / 0.920
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	0 / 0.200	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 0.633	2 / 0.868	0 / 0.200	2 / 0.920	0 / 0.000	2 / 0.920

Installation Schedule

	PYS	**FY 2016**				**FY 2017**				**FY 2018**			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
In	2	-	2	-	-	-	-	-	-	-	-	-	2
Out	2	-	-	-	-	-	-	2	-	-	-	-	-

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

Installation Cost	**Prior Years** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Prior Years	2 / 0.560	2 / 0.866	- / -	2 / 0.809	0 / 0.000	2 / 0.809
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 0.560	2 / 0.866	- / -	2 / 0.809	0 / 0.000	2 / 0.809

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

Modification Item 2 of 2: Launcher Group

Installation Information

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

Installation Schedule

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	2	-	2	-	-	-	-	-	-	-	-	-	2
Out	2	-	-	-	-	-	-	2	-	-	-	-	-

Footnotes:

(18) Each installed NSSMS Radar group includes one Solid State Transmitter (SSTX). Each LHD receives two Radar groups and therefore two SSTXs. (Note: LHD 2, 4, 6 received SSTX upgrades in prior years.) FY19 LHD 3 receives 2 SSTX ORDALTs, FY20 LHD 1 receives 2 SSTX ORDALTs, FY23 LHD 5 receives 2 SSTX ORDALTs.

(19) Each installed NSSMS Radar group includes one IRP; each LHD receives two Radar groups and therefore two IRPs. FY16 LHD 2 received 2 IRPs, FY18 LHD 6 receives 2 IRPs, FY19 LHD 3 receives 2 IRPs, FY19 LHD 3 receives 2 IRPs, FY20 LHD 1 receives 2 IRPs, FY23 LHD 5 receives 2 IRPs.

(20) Each installed NSSMS Launcher group includes one launcher ESSM ORDALT. Each LHD receives two Launcher groups and therefore two ESSM ORDALTs. FY16 LHD 2 received 2 ESSM ORDALTs, FY18 LHD 6 receives 2 ESSM ORDALTs, FY19 LHD 3 receives 2 ESSM ORDALTs, FY20 LHD 1 receives 2 ESSM ORDALTs, FY20 LHD 4 receives 2 ESSM ORDALTs, FY23 LHD 5 receives 2 ESSM ORDALTs.

(21) Each installed NSSMS Launcher group includes one System Launcher Controller (SLC). Each LHD receives two Launcher groups and therefore two SLCs. FY16 LHD 2 received 2 SLCs, FY18 LHD 6 receives 2 SLCs, FY19 LHD 3 receives 2 SLCs, FY20 LHD 1 receives 2 SLCs, FY20 LHD 4 receives 2 SLCs, FY23 LHD 5 receives 2 SLCs.

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Exhibit P-3a, Individual Modification: FY 2018 Navy		Date: May 2017
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	14.922	48.950	42.732	61.770	0.000	61.770
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	14.922	48.950	42.732	61.770	0.000	61.770
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	14.922	48.950	42.732	61.770	0.000	61.770
(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:
FY16-FY22 includes the procurement of COTS Conversion Kits for CVNs, LPDs, LHDs, LHAs and LSDs, and 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 obsolescent COTS hardware, will support Navy Open Architecture computing environment standards to facilitate software reuse and will support the integration of new CS elements and capabilities. FY13-FY18 kits are based on a Technology Insertion - 12 (TI-12) and Technology Insertion - 12 Hybrid (TI-12H) configurations. FY16-FY21 transitions to the TI-16 configuration with procurement for shore sites starting in FY16 and procurement for ships starting in FY19. FY21-22 transitions to the TI-22 configuration. 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).

[UQ5IN FMP SHIP UNITS]

The cost for the ship and shore site kits vary depending on the specific ship class (CVN, LPD, LHD,LHA,LSD) and the specific shore site and the existing configuration of the ship/site involved. The costs for each kit are listed below. SSDS kit funding is provided to various contractors and field activities. The SSDS equipment procurement is based on competitive, fixed price contracts. Production lead time for kits ranges from 9 months (for equipment COTS upgrade kits/field changes) to 15 months for system COTS conversion kits for ships and shore sites.

The non-FMP kits are required for four SSDS/CS shore sites: The SSDS MK 2 System/Software Design Agent System Integration Lab, SCSC wallops Island CS Integration/Engineering test facility, NSWC Dahlgren CS software certification facility, and crew SSDS maintenance training facilities. Each of these facilities requires equipment to support the 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. The FY16 procurement of non-FMP kits is mainly for TI-12/TI-12H and it includes procurement of the initial TI-16 equipment for the Design Agent System Integration lab.

The FY17 procurement includes the completion of TI-12/TI-12H equipment for the shore sites, and completion of the TI-16 equipment procurement for the Design Agent System Integration Lab.

The FY18 procurement includes TI-16 equipment for SCSC Wallops Island for Combat System Integration Testing and TI-16 equipment for the competitive CSEA contract for the development of the SSDS MK2 ACB-20 baseline.

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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:**	

SSDS FY16 unit costs are:
$ 6,353K for (1) COTS Conversion Kit, for Design Agent System Integration Lab (SIL) (TI-12H)
$ 3,422K for (1) Dahlgren COTS Conversion Kit(TI-12)
$ 8,498K for (1) Wallops Island COTS Conversion Kit(TI-12H)
$ 5,361K for (1) LPD COTS Conversion Kit for Design Agent SIL (TI-16)
$ 4,465K for (1) Maintenance Trainer COTS Upgrade Kit(TI-12H)
$ 1,575K for (1) LHD Delta Kit for SSDS communication equipment changes/cyber-security protection

Total Cost for 6 units in FY16 (UQ005B) is $29,674K.

SSDS FY17 unit costs are:
$ 11,602K for (1) LHD COTS Conversion Kit (TI-12H)for ACDS replacement in LHD6
$ 7,030K for (1) LSD COTS Conversion Kit(TI-12H)for LSD44
$ 4,408K for (1) Design Agent COTS Upgrade Delta Kit(TI-12H)
$ 3,077K for (1) Wallops Island/Dahlgren COTS Upgrade Delta Kit (TI-12H/TI-12)
$ 1,663K for (1) Maintenance Trainer COTS Upgrade Delta Kit (TI-12H)
$ 3,749K for (1) Design Agent COTS Upgrade Delta Kit (TI-16)

Total Cost for 6 units in FY17 (UQ005B) is $31,529K.

SSDS FY18 unit costs are:
$ 16,692K for (2) LPD COTS Conversion Kits(TI-12H) for LPD23 and LPD24
$ 7,258K for (1) LSD COTS Conversion Kit(TI-12H) for LSD47
$ 7,988K for (1) Design Agent COTS Upgrade Kit(TI-16 - GFE for Design Agent/CSEA competitive contract)
$ 7,776K for (1) Wallops Island COTS Upgrade Kit(TI-16)for CS Integration Testing
$ 704K for (1) Dahlgren (TI-12 Field Changes),
$ 704K for (1) CDSA DN Maintenance Trainer(TI-12H Field Changes)

Total Cost for 7 units in FY17 (UQ005B) is $41,122K

SSDS Ship Installation Costs in FY16 (total $16,888K) include:
$ 9,807K for AIT/DSA for installation of (2) LHD Kits (for LHD2 SSDS MK2/Combat System AAW Capstone Installation (Includes installation of FY15 LHD2 Kit and FY14 redesignated LSD47 Kit (1 of 3 FY14 Ship COTS Conversion Kits shown on the FY2014 procurement row of the P3A exhibit for UQ5IN ship installation information).
$ 5,493K for AIT/DSA for installation of (1) LSD Kit in LSD51 with Signal Shelter (SS) removal for weight and moment compensation; advanced planning installation funding for LSD49 Kit; and for advanced planning for LSD45 SS removal.
$ 1,588K for Advanced Planning/DSA for CVN78, CVN68 Class, LHD6, LHA6 Class.

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

SSDS Ship Installation Costs in FY17 (total $8,983K) include:
$ 4,354K for AIT/DSA AIT/DSA for installation of (1) LSD Kit in LSD49 with SS removal, and delayed SS removal in LSD45.
$ 991K for AIT/DSA for installation of LHD2 Delta Kit/Changes.
$ 3,638K for Advanced Planning/DSA/Tech Support for CVN78, SDTS, LHD6, LPD23, LPD24, and LSD44.

SSDS Ship Installation Costs in FY18 (total $18,108K) include:
$ 7,718K for AIT/DSA for installation of (1) LHD Kit (TI-12H) in LHD6
$ 4,754K for AIT/DSA for installation of (1) LSD Kit (TI-12H) with SS removal in LSD44
$ 2,000K for AIT/DSA for installation of TI-12 SCD/Field Changes in CVN78
$ 3,636K for Advanced Planning/DSA for CVN69, LHD4, LPD17, LPD23, LPD24, and LSD47

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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 Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total 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	4 / 5.928	1 / 1.575	2 / 18.632	3 / 23.950	- / -	3 / 23.950
1.1.2) UQ6IN NON FMP SHORE SITES - NonOrganic	2 / 1.765	5 / 28.099	4 / 12.896	4 / 17.172	- / -	4 / 17.172
Subtotal: Recurring	- / 7.693	- / 29.674	- / 31.528	- / 41.122	- / -	- / 41.122
Subtotal: UQ005B - SSDS COTS CONVERSION KITS	6 / 7.693	6 / 29.674	6 / 31.528	7 / 41.122	- / -	7 / 41.122
Subtotal: Procurement, All Modification Items	- / 7.693	- / 29.674	- / 31.528	- / 41.122	- / -	- / 41.122
Installation						
Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS	- / 7.229	- / 19.276	- / 11.204	- / 20.648	- / 0.000	- / 20.648
Subtotal: Installation	- / 7.229	- / 19.276	- / 11.204	- / 20.648	- / -	- / 20.648
Total						
Total Cost (Procurement + Support + Installation)	14.922	48.950	42.732	61.770	0.000	61.770

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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 2016	FY 2017	FY 2018
Contract Dates	Apr 2016	Apr 2017	Jan 2018
Delivery Dates	Jul 2017	Jul 2018	Apr 2019

Installation Information

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

Installation Cost	Prior Years Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total Qty (Each) / Total Cost ($ M)
Prior Years	0 / 6.079	3 / 15.166	1 / 4.416	- / -	- / -	- / -
FY 2016	- / -	- / -	1 / 0.991	- / -	- / -	- / -
FY 2017	- / -	0 / 1.722	0 / 2.586	2 / 14.472	0 / 0.000	2 / 14.472
FY 2018	- / -	- / -	0 / 0.990	0 / 1.144	0 / 0.000	0 / 1.144
Total	0 / 6.079	3 / 16.888	2 / 8.983	2 / 18.108	0 / 0.000	2 / 18.108

Installation Schedule

	PYS	FY 2016 Q1	Q2	Q3	Q4	FY 2017 Q1	Q2	Q3	Q4	FY 2018 Q1	Q2	Q3	Q4
In	-	-	-	2	1	2	-	-	-	-	-	-	2
Out	-	-	-	2	1	2	-	-	-	-	-	-	2

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

Installation Cost	Prior Years Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total Qty (Each) / Total Cost ($ M)
Prior Years	0 / 1.150	2 / 0.380	- / -	- / -	- / -	- / -
FY 2016	- / -	0 / 2.008	5 / 1.921	- / -	- / -	- / -
FY 2017	- / -	- / -	0 / 0.300	4 / 1.250	0 / 0.000	4 / 1.250
FY 2018	- / -	- / -	- / -	0 / 1.290	0 / 0.000	0 / 1.290
Total	0 / 1.150	2 / 2.388	5 / 2.221	4 / 2.540	0 / 0.000	4 / 2.540

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 Schedule

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	1	1	-	-	-	5	-	-	-	4
Out	-	-	-	1	1	-	-	-	5	-	-	-	4

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	541.808	71.245	95.546	73.184	0.000	73.184	72.852	73.015	74.539	76.023	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	541.808	71.245	95.546	73.184	0.000	73.184	72.852	73.015	74.539	76.023	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**541.808**	**71.245**	**95.546**	**73.184**	**0.000**	**73.184**	**72.852**	**73.015**	**74.539**	**76.023**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	0.147	0.177	0.311	-	0.311	0.374	0.281	0.231	0.204	Continuing	Continuing
Flyaway Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
The Theater Mission Planning Center (TMPC) consists of Commercial and Government Off-The-Shelf (COTS/GOTS) software and COTS hardware. TMPC provides targeting, mission planning, strike planning and execution, mission distribution, and operational employment capabilities for the Tomahawk Land Attack Missile (TLAM). Continuous TMPC software development 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 develops and distributes missions for the Tomahawk Missile; provides command information services for Tomahawk Weapon System (TWS); provides strike planning, execution, coordination, control and reporting, and provides Maritime Component Commanders (MCC) the capability to plan or modify conventional TLAM missions. TMPC has evolved into scalable configurations deployed in four configurations at 186 sites: Cruise Missile Support Activities (CMSAs) (3+1 FMS), Tomahawk Strike and Mission Planning Cells (TSMPCs) (3 - C5F, C6F, C7F), Carrier Strike Groups (CSGs) (19 - 10 CVN), Firing Units (FRUs) (84 Surface/55 Submarines), and fleet training sites and labs (19). TMPC supports major joint combat operations and Overseas Contingency Operations. TMPC was previously referred to as the 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. The Selective Availability Anti-Spoofing Module (SAASM) Global Positioning System (GPS) capability, workflow improvements to Mission Planning, Strike Planning & Execution and TWS Single System initiative are included in this line to transition to a Service Oriented Architecture, improve TCS "Kill Chain" planning and communications architecture and system effectiveness. Also, this funding line provides for COTS/GOTS refreshment, engineering changes, software upgrades, 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 system configurations.

Surface and Submarine Tactical Tomahawk Weapon Control System (TTWCS) is a post milestone III program executing its first major tech refresh since its 2004 IOC. The first phase of this tech refresh partially resolves processor component obsolescence. The final phase completes all hardware and software obsolescence efforts and will be fleet released in 2017. TTWCS functions include: tasking validation (missile mission matching), planning of over the water routes, initialization, preparation and launch of BLK III/IV missiles, TTWCS reduced response time and increased operational flexibility through addition of Launch Platform Mission Planning (LPMP), and in-flight monitoring and control of Blk IV missiles. Final phase efforts began in FY 2012 and consist of the completion of full TTWCS hardware technology refresh, C4I Web services interfaces and operability to be fielded in backfit firing units. 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 legacy Ada code. Finally, it will allow reduction of system complexity and incorporation of critical software fixes. Program options are being identified that will enable TWS integration into future platforms. Included in those options will be changes necessary for TTWCS to ensure required functionality as the missile is modernized beginning in FY 2019.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	Date: May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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 / 525300, TOMAHAWK Support Equipment				- / 541.808	- / 71.245	- / 95.546	- / 73.184	- / 0.000	- / 73.184
P-40	**Total Gross/Weapon System Cost**				**- / 541.808**	**- / 71.245**	**- / 95.546**	**- / 73.184**	**- / 0.000**	**- / 73.184**

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

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

Justification:
Funding is required to continue fielding version TTWCS 5.4.0 and begin fielding of TTWCS hardware/software obsolescence updates (v5.4.0.2). Funds also provide for integration, modernization and interoperability efforts necessary to keep pace with changes, retain capability and exploit capabilities of internal (TWS All-Up-Round missile and TTWCS) and external (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 to the effectiveness of the TWS, into TMPC deployed configurations. Funding supporting TTWCS is appropriately phased to complete the 1st major tech refresh since IOC in 2004. TTWCS relies on COTS hardware that requires a 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 and continuing in to FY 2018 to comply with commercial hardware/software supportability mandates, obsolescence, and information assurance requirements to maintain pace with modern computing architectures.

Funding is required to initiate and continue the upgrade of unsupportable and obsolete TMPC software to ensure compliance with DoD cyber security mandates. Funding also addresses a National Technical Means (NTM) imagery format change. The NTM change requires TMPC upgrades to be fielded to all TLAM mission planning sites by 3QFY 2018. The Tomahawk Weapon System cannot execute a mission successfully without the NTM imagery as it is used by TMPC for precision targeting and mission planning. FY 2018 continues deployment of TMPC 5.0.1 to Firing Units and modernization upgrade efforts for TMPC 6.0. TMPC 6.0 includes navigation and communications improvements required to support the TWS Modernization program.

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Exhibit P-5, Cost Analysis: FY 2018 Navy		Date: May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	541.808	71.245	95.546	73.184	0.000	73.184
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	541.808	71.245	95.546	73.184	0.000	73.184
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**541.808**	**71.245**	**95.546**	**73.184**	**0.000**	**73.184**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares ($ in Millions)	-	0.147	0.177	0.311	-	0.311
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.

	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Cost Elements	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]	-	-	11.817	-	-	2.594	-	-	1.519	-	-	1.549	-	-	-	-	-	1.549
Subtotal: Recurring Cost	-	-	11.817	-	-	2.594	-	-	1.519	-	-	1.549	-	-	-	-	-	1.549
Subtotal: Hardware - TTWCS Cost	**-**	**-**	**11.817**	**-**	**-**	**2.594**	**-**	**-**	**1.519**	**-**	**-**	**1.549**	**-**	**-**	**-**	**-**	**-**	**1.549**
Hardware - HARDWARE RECURRING SUPPORT - TTWCS Cost																		
Recurring Cost																		
2.1.1) TTWCS Product Improvement [2]	-	-	122.909	-	-	11.511	-	-	18.735	-	-	18.018	-	-	-	-	-	18.018
Subtotal: Recurring Cost	-	-	122.909	-	-	11.511	-	-	18.735	-	-	18.018	-	-	-	-	-	18.018
Subtotal: Hardware - HARDWARE RECURRING SUPPORT - TTWCS Cost	**-**	**-**	**122.909**	**-**	**-**	**11.511**	**-**	**-**	**18.735**	**-**	**-**	**18.018**	**-**	**-**	**-**	**-**	**-**	**18.018**
Hardware - TMPC Cost																		
Recurring Cost																		
3.1.1) Tomahawk Mission Planning Center (TMPC) Hardware [3]	-	-	19.001	-	-	2.765	-	-	2.969	-	-	3.579	-	-	-	-	-	3.579
Subtotal: Recurring Cost	-	-	19.001	-	-	2.765	-	-	2.969	-	-	3.579	-	-	-	-	-	3.579

Exhibit P-5, Cost Analysis: FY 2018 Navy	Date: May 2017
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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	-	-	*19.001*	-	-	*2.765*	-	-	2.969	-	-	*3.579*	-	-	-	-	-	*3.579*
Software - PRODUCT IMPROVEMENTS - TMPC Cost																		
Recurring Cost																		
4.1.1) TMPC Product Improvements [4]	-	-	121.031	-	-	22.635	-	-	33.385	-	-	17.867	-	-	-	-	-	17.867
Subtotal: Recurring Cost	-	-	*121.031*	-	-	*22.635*	-	-	*33.385*	-	-	*17.867*	-	-	-	-	-	*17.867*
Subtotal: Software - PRODUCT IMPROVEMENTS - TMPC Cost	-	-	*121.031*	-	-	*22.635*	-	-	*33.385*	-	-	*17.867*	-	-	-	-	-	*17.867*
Support - Support - TTWCS Cost																		
5.1) TTWCS Production Engineering	-	-	22.123	-	-	1.018	-	-	1.038	-	-	1.059	-	-	-	-	-	1.059
5.2) TTWCS Integrated Logistic Support [5]	-	-	88.809	-	-	9.982	-	-	13.433	-	-	11.081	-	-	-	-	-	11.081
Subtotal: Support - Support - TTWCS Cost	-	-	*110.932*	-	-	*11.000*	-	-	*14.471*	-	-	*12.140*	-	-	-	-	-	*12.140*
Support - TMPC Cost																		
6.1) TMPC Production Engineering [6]	-	-	32.350	-	-	4.295	-	-	4.392	-	-	4.353	-	-	-	-	-	4.353
6.2) TMPC Production Support [7]	-	-	30.342	-	-	4.032	-	-	4.164	-	-	4.126	-	-	-	-	-	4.126
6.3) TMPC Integrated Logistic Support [8]	-	-	69.398	-	-	12.413	-	-	15.911	-	-	11.552	-	-	-	-	-	11.552
Subtotal: Support - TMPC Cost	-	-	*132.090*	-	-	*20.740*	-	-	*24.467*	-	-	*20.031*	-	-	-	-	-	*20.031*
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	-	-	**541.808**	-	-	**71.245**	-	-	**95.546**	-	-	**73.184**	-	-	**0.000**	-	-	**73.184**

Exhibit P-5, Cost Analysis: FY 2018 Navy		**Date:** May 2017
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.

[2] TTWCS relies on COTS hardware that requires a 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 and continuing in to FY 2018 to comply with commercial hardware/software supportability mandates, obsolescence, and information assurance requirements to maintain pace with modern computing architectures.

[3] Procures hardware and software for installations of system upgrades at all 186 TMPC sites. This also includes hardware and software for the system developers. FY 2018 procure the hardware and software for the installation of TMPC 5.0.1 onboard Firing Units Guided Missile Destroyer, Guided Missile Cruiser and Nuclear Powered General Purpose Attack Submarine (DDGs/CGs/SSNs), Command Staffs, laboratories, and training sites.

[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 software and to ensure compliance with DoD cyber security mandates. Funding also addresses a National Technical Means (NTM) imagery format change. The NTM change requires TMPC upgrades to be fielded to all TLAM mission planning sites by 3QFY 2018. The Tomahawk Weapon System cannot execute a mission successfully without the NTM imagery as it is used by TMPC for precision targeting and mission planning. In FY 2018, this line also continues the upgrades to the TMPC Enterprise Network (TEN 2.0) will improve the distribution of electronic software distribution / propagation, enable remote assistance/troubleshooting, provide enhanced configuration management visibility, and reduce TMPC IA risk and costs associated with maintaining an effective IA posture. Funding also provides software upgrades to the submarine community to specifically address system interfaces. Cost increases in FY 2017 support the TMPC system complexity reduction initiative that address US Fleet Forces Command (USFFC) requirements for fleet operators to effectively execute large and complex TLAM operations.

[5] TTWCS Integrated Logistics Support required for Surface/Submarine installations onboard firing units. Costs increases in FY 2017 are associated with the commencement of installation of version v5.4.0.2. which is more expensive than previous upgrades due to increased shipboard hardware changes. FY 2018 funding decrease associated with surface and submarine platform TTWCS update schedules.

[6] 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.

[7] 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.

[8] Funds installations support associated with the deployment of new TMPC system upgrades to all 186 TMPC sites. FY 2018 funds the installation of TMPC 5.0.1 onboard Firing Units Guided Missile Destroyer, Guided Missile Cruiser and Nuclear Attack Submarine (DDGs/CGs/SSNs), Command Staffs, laboratories, and training classrooms.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	961.421	240.677	215.138	246.221	0.000	246.221	275.485	278.260	245.166	258.037	-	2,720.405
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	961.421	240.677	215.138	246.221	0.000	246.221	275.485	278.260	245.166	258.037	-	2,720.405
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**961.421**	**240.677**	**215.138**	**246.221**	**0.000**	**246.221**	**275.485**	**278.260**	**245.166**	**258.037**	**-**	**2,720.405**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	-	0.140	-	-	-	-	-	-	-	-	0.140
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 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.

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 FY 2042 in support of OHIO Class SSBNs. Below is a description of each SSI Increment (Inc):

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

SSI Inc 1: Provide subsystems integration into the MOD 6/7 Tech Refresh for the Fire Control System (FCS) leaving the missile and guidance system interface unchanged. Also provides Ship/Strategic Weapons Support System (SWSS) SHIPALT's for ship interfaces that comprise of power, missile tube cabling, radio room, and Fire Control (FC) cabling. Installation is accomplished during 50 day refit without missile offload.

SSI Inc 2: Introduction of an integrated Shipboard Data Systems (SDS) which is comprised of Data Recording Subsystem (DRS), Maintenance Information Network (MIN), and Electronic Work Log (EWL) subsystems. The DRS legacy functionality, connectivity, equipment is unchanged. The EWL subsystem provides software upgrades and the Window 7 Operating System upgrade. Provides subsystem SPALTS for SDS and Strategic Weapons System Maintenance Information Network (SWSMIN) and refresh portable computing devices.

SSI Inc 4: Prerequisites are SSI Inc 1 and Inc 2. Inc 4 provides SWS Subsystem SPALTs which includes Mod 6/7 FCS Refresh SPALT, Navigation (NAV) Radio Frequency (RF) SPALT, SDS SPALT, and Cabling SPALT. For the FC Mod 6/7 Refresh it contains the technical refresh, integration and commonality of the system. The DRS legacy software modifies the support of the new NAV/SHIP/DRS and NAV/FC interfaces and format changes. For Navigation changes, the equipment remains in NAV Center. Supplies the first technical refresh in 25 years for Navigation Aids (NAVAIDS) Electronics, frequency standard, workstation, and NAV Control Panel (NCP).

SSI Inc 8: Prerequisite is SSI Inc 4. Inc 8 provides replacement of the 30 year old ESGN which needs a refresh of inertial technology components, 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 10: Prerequisite is SSI Inc 2. Inc 10 provides for the refresh of Shipboard Data Systems.

SSI Inc 11: Launcher Initiation System (LIS) is being developed for backfit onto OHIO Class D5LE SSI Inc 1 is a prerequisite. This provides a technical refresh of 30+ year old technology to ensure long term system reliability. SHIP/SWSS SHIPALT are to replace electrical cable with hybrid fiber-optic/electrical cable.

SSI Inc 13: Prerequisite is SSI Inc 4. Inc 13 provides Shipboard Systems Refresh for FCS, NAV, and Missile Test and Readiness Equipment (MTRE) to integrate within 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.

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 D-5 life extension.

NEW START
Funding in this category is in support of the Strategic Arms Reduction Treaty (New START) signed into law on 5 February 2011. New START is a nuclear arms reduction treaty between the United States and the Russian Federation which limits the number of deployed launchers.

COLUMBIA CLASS
Funding in this category is in support of the Columbia class SSBN for the procurement of trainer equipment.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy						**Date:** May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*	Quantity / Total Cost *(Each) I ($ M)*
P-40a	Strategic Missile Systems Equip				- / 961.421	- / 240.677	- / 215.138	- / 246.221	- / -	- / 246.221
P-40	**Total Gross/Weapon System Cost**				**- / 961.421**	**- / 240.677**	**- / 215.138**	**- / 246.221**	**- / 0.000**	**- / 246.221**

*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 & 1.4): Funding in FY 2018 provides for MK-74 Gas Generator production and an increase in Ballast Can Assemblies from QTY 15 to QTY 25 that are required to keep SSBN 730/731 as Strategic assets.

Fire Control Equipment (Cost code 2.1, 2.3-2.5): Funding in FY 2018 provides procurement of continued capital maintenance projects at the Naval Industrial Reserve Ordnance Plant (NIROP) in Pittsfield, MA, including an elevator replacement. These projects are essential to correct environmental, safety, and energy conservation deficiencies. Funding also provides procurement of hardware and software for targeting. Funding supports the integration of Navy Enterprise Resource Planning (NERP) and the Advanced Inventory Logistics (SAIL) to track tactical support equipment.

Navigation Equipment (Cost code 3.1-3.3): Funding in FY 2018 provides for an increase in stable platform & housing material kits and shock isolation system kits from QTY 2 to QTY 4 for Electro-statically Supported Gyro Navigator (ESGN) to maintain survivability for the SSBNs. Funding also provides for factory test equipment refresh to the Inertial Navigation System (INS) Cabinet and Platform Electronics which are critical to the testing of the ESGN. Funding is required for replacement of worn or damaged inertial test equipment used at contractors' plants to support test, evaluation, and analysis of inertial instruments.

Instrumentation/Missile Test Equipment (Cost code 4.4-4.5): Funding in all years provides for shore based and shipboard test instrumentation equipment in support of missile flight tests. Funding in FY 2018 provides for the refresh of the flight test instrumentation S-Band Mobile Array Telemetry (SMART) Antenna.

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. IT hardware and software components that connect to Strategic Weapons System Network (SWSNET) are also part of the acquisitions.

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

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

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, 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.

Launcher and Handling Equipment (Cost code 6.4): Funding in FY 2018 provides for major Launcher SPALT activities including Maintenance Platform refresh, Ejector Group Handling Equipment (EGHE) refresh, Variable Energy Eject (VEE) Actuator refurbishment, Davit SPALT, and Cooling Chamber Sight Glass Test Fixture refurbishment, to address aging and obsolescence issues.

Fire Control Equipment (Cost code 7.2): Funding in FY 2018 supports refreshes of the fire control software (FCS) and hardware required to correct defects including the Preliminary Design Review and Critical Design Review of FCS 654/954. FCS 654/954 contains 94 Computer Software Configuration Items (CSCIs), 1.8 million lines of code. The scope of one FC redesign will correct between 85 and 100 software defects, as well as include approximately 25 software modifications.

Navigation Equipment (Cost code 8.2-8.5): Funding in FY18 provides for the following efforts:
-Efforts to support problem correction, fleet documentation, system modeling and simulations
-Navigation SPALTs to the legacy ESGN to extend the service life for the fleet usage
-Testing of Navigation's software coding
-Refresh of the GPS Antenna

Instrumentation/Missile Checkout equipment (Cost code 9.1): FY 2018 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 FY 2042 in support of OHIO Class SSBNs. Below is a description of each SSI Increment (Inc):

SSI Inc 1: Provide subsystems integration into the MOD 6/7 Tech Refresh for the Fire Control System (FCS) leaving the missile and guidance system interface unchanged. Also provides Ship/Strategic Weapons Support System (SWSS) SHIPALT's for ship interfaces that comprise of power, missile tube cabling, radio room, and Fire Control (FC) cabling. Installation is accomplished during 50 day refit without missile offload.

SSI Inc 2: Introduction of an integrated Shipboard Data Systems (SDS) which is comprised of Data Recording Subsystem (DRS), Maintenance Information Network (MIN), and Electronic Work Log (EWL) subsystems. The DRS legacy functionality, connectivity, equipment is unchanged. The EWL subsystem provides software upgrades and the Window 7 Operating System upgrade. Provides subsystem SPALTS for SDS and Strategic Weapons System Maintenance Information Network (SWSMIN) and refresh portable computing devices.

SSI Inc 4: Prerequisites are SSI Inc 1 and Inc 2. Inc 4 provides SWS Subsystem SPALTs which includes Mod 6/7 FCS Refresh SPALT, Navigation (NAV) Radio Frequency (RF) SPALT, SDS SPALT, and Cabling SPALT. For the FC Mod 6/7 Refresh it contains the technical refresh, integration and commonality of the system. The DRS legacy software modifies the support of the new NAV/SHIP/DRS and NAV/FC interfaces and format changes. For Navigation changes, the equipment remains in NAV Center. Supplies the first technical refresh in 25 years for Navigation Aids (NAVAIDS) Electronics, frequency standard, workstation, and NAV Control Panel (NCP).

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

Efforts funded in Cost codes 12.7 & 12.10 FY 2018 include:
-Installation of Inc 4 MOD 6 Fire Control Refresh SPALT Kit
-Installation of Inc 4 Navigation SPALT and TRIDENT SHIPALT
-Interface Working Group (IWG) support for installation issues and trouble resolution

SSI Inc 8: Prerequisite is SSI Inc 4. Inc 8 provides replacement of the 30 year old ESGN which needs a refresh of inertial technology components, 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.

Efforts funded in Cost codes 13.4-13.6 & 13.8-13.10 in FY 2018 include:
-Gyroscope and Inertial Navigation System (INS) performance and qualification testing
-Validation testing of fleet and trainer documentation
-Gyroscope Production increase from QTY 50 in FY 2017 to QTY 60 in FY2018 including acceptance testing
-Procure INS for Inc 8 QTY 6 in FY 2018
-Procure On Board Repair Parts (OBRP) for Gyroscope's and circuit card assemblies
-Independent Verification and Validation for Inc 8 efforts
-INS Production Software testing and qualification
-Inc 8 Installation procedure and coordination definition

SSI Inc 10: Prerequisite is SSI Inc 2. Inc 10 provides for the refresh of Shipboard Data Systems.

SSI Inc 11: Launcher Initiation System (LIS) is being developed for backfit onto OHIO Class D5LE SSI Inc 1 is a prerequisite. This provides a technical refresh of 30+ year old technology to ensure long term system reliability. SHIP/SWSS SHIPALT are to replace electrical cable with hybrid fiber-optic/electrical cable.

Efforts funded in Cost codes 15.6-15.7 in FY 2018 include:
-Installation of LIS SPALT kits and Fiberoptic Cables

SSI Inc 13: Prerequisite is SSI Inc 4. Inc 13 provides Shipboard Systems Refresh for FCS, NAV, and Missile Test and Readiness Equipment (MTRE) to integrate within the subsystems.

Efforts funded in Cost codes 16.1-16.4, 16.5, 16.7, & 16.9 in FY 2018 include:
-MTRE refresh to integrate with Fire Control software changes for SSI Inc 13
-Procure Navigation SSI Inc 13 Pre-Production SPALT Kits QTY 6 for testing and qualification
-Navigation SSI Inc 13 Engineering Development Model (EDM) Hardware and Software qualification
-Procure Navigation SSI Inc 13 OBRP

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.

Efforts funded Cost codes 17.1-17.2 in FY 2018 include:

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

-Lead Integrator Concept Reviews, Incorporation of Common Element Central Processing Unit (CPU) into Non-Inertial Processors, Evaluation of applicable hardware and software obsolescence, Nav Portable Computing Device (PCD) Refresh, Investigate refresh of all Auxiliary Support Equipment (Simulators, Test Stations), Development of Program Schedule and Tech Baseline, and Concept evaluation and Model Build.

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 D-5 life extension.

Funds in Cost code 18.1 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 the TTF, Bangor, and at TTF, Kings Bay. The required effort includes upgrade of the Bangor and Kings Bay Navigation and Fire Control trainers from SSI Inc 4 and Inc 11, Integration of Fire Control SSI Inc 4, Inc 8 PC Simulation, Inc 8 and Inc 13 Curricula development, and development of the Virtual Strategic Weapons System (SWSD) classroom trainers. Funding also addresses the need for acquisition of upgrades to the Bangor and Kings Bay TTFs resulting from tactical changes in the TRIDENT II (D5) missile under the Life Extension (LE) program. FY 2018 tasks will include the SSI Inc 8 PC Simulation, Inc 8 and Inc 13 Curricula development, and SSI Inc 13 that updates the software to the Fire Control System network and modifies the Navigation interface.

NEW START

Funding in Cost code 19.2 is in support of the Strategic Arms Reduction Treaty (New START) signed into law on 5 February 2011. New START is a nuclear arms reduction treaty between the United States and the Russian Federation which limits the number of deployed launchers. Funding in FY 2018 will procure support equipment and associated support for steel closure design, procurement and material support for the missile tubes.

COLUMBIA CLASS
Funding in Cost code 20.1 is in support of the Columbia class SSBN.

Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy | **Date:** May 2017

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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		308.712	52	16.053	320.625	8	2.565	327.038	8	2.616	333.578	8	2.669	-	-	-	333.578	8	2.669
1.3) Launch Tube Closures	A		533.218	55	29.327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) Ballast Production	A		-	-	-	-	-	-	437.000	15	6.555	445.760	25	11.144	-	-	-	445.760	25	11.144
1.5) Second Explosives Handling Wharf (EHW) Support Equipment	A		-	-	5.864	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Second Explosives Handling Wharf (EHW) Outfitting	A		-	-	5.925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) Other Material Support- Launcher and Handling Equipment			*-*	*-*	*74.506*	*-*	*-*	*2.565*	*-*	*-*	*9.171*	*-*	*-*	*13.813*	*-*	*-*	*-*	*-*	*-*	*13.813*
2) Other Material Support-Fire Control Equipment																				
2.1) Nirop Capital Maintenance	A		-	-	21.422	-	-	2.855	-	-	2.722	-	-	5.014	-	-	-	-	-	5.014
2.2) Fire Control Auxiliary Support Equipment	A		-	-	9.470	-	-	1.876	-	-	3.958	-	-	-	-	-	-	-	-	-
2.3) D5 Targeting Hardware	A		-	-	0.830	-	-	0.845	-	-	0.860	-	-	0.875	-	-	-	-	-	0.875
2.4) Advanced Inventory Logistics (SAIL)	A		-	-	1.354	-	-	1.865	-	-	1.371	-	-	1.344	-	-	-	-	-	1.344
2.5) Targeting Software Refresh	A		-	-	6.015	-	-	8.365	-	-	10.524	-	-	10.736	-	-	-	-	-	10.736
Subtotal: 2) Other Material Support- Fire Control Equipment			*-*	*-*	*39.091*	*-*	*-*	*15.806*	*-*	*-*	*19.435*	*-*	*-*	*17.969*	*-*	*-*	*-*	*-*	*-*	*17.969*
3) Other Material Support-Navigation Equipment																				
3.1) Stable Platform and Housing Material Kits	A		360.955	22	7.941	371.000	5	1.855	378.000	2	0.756	385.560	4	1.542	-	-	-	385.560	4	1.542
3.2) Shock Isolation System Kits	A		726.583	12	8.719	747.000	6	4.482	760.708	2	1.521	775.922	4	3.104	-	-	-	775.922	4	3.104
3.3) Factory Test Equipment	A		-	-	-	-	-	-	-	-	1.875	-	-	2.888	-	-	-	-	-	2.888
Subtotal: 3) Other Material Support- Navigation Equipment			*-*	*-*	*16.660*	*-*	*-*	*6.337*	*-*	*-*	*4.152*	*-*	*-*	*7.534*	*-*	*-*	*-*	*-*	*-*	*7.534*
4) Other Material Support- Instrumentation/Missile Checkout Equipment																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																			Date: May 2017		

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
4.1) Umbilical Sets/ Kits	A		1,948.000	4	7.792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) Fire Suppression System	A		-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) Electronic Documentation Refresh	A		-	-	1.852	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) Data System Integration	A		-	-	1.459	-	-	0.389	-	-	0.396	-	-	0.403	-	-	-	-	-	0.403
4.5) Flight Test Instrumentation (FTI) Refresh	A		-	-	32.684	-	-	2.750	-	-	1.139	-	-	14.637	-	-	-	-	-	14.637
Subtotal: 4) Other Material Support-Instrumentation/Missile Checkout Equipment			*-*	*-*	*44.087*	*-*	*-*	*3.139*	*-*	*-*	*1.535*	*-*	*-*	*15.040*	*-*	*-*	*-*	*-*	*-*	*15.040*
5) Other Material Support- Information Technology																				
5.1) Hardware/ Software IT Procurement	A		-	-	12.950	-	-	2.586	-	-	2.629	-	-	2.768	-	-	-	-	-	2.768
Subtotal: 5) Other Material Support-Information Technology			*-*	*-*	*12.950*	*-*	*-*	*2.586*	*-*	*-*	*2.629*	*-*	*-*	*2.768*	*-*	*-*	*-*	*-*	*-*	*2.768*
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		1,563.625	8	12.509	1,613.000	2	3.226	-	-	-	-	-	-	-	-	-	-	-	-
6.4) Launcher SPALTs	A		-	-	2.760	-	-	10.784	-	-	13.468	-	-	16.770	-	-	-	-	-	16.770
Subtotal: 6) Alterations-Launcher and Handling Equipment			*-*	*-*	*21.883*	*-*	*-*	*14.010*	*-*	*-*	*13.468*	*-*	*-*	*16.770*	*-*	*-*	*-*	*-*	*-*	*16.770*
7) Alterations-Fire Control																				
7.1) Portable Computing Devices (PCD) Refresh SPALT	A		-	-	2.833	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.2) Minor SPALTS	A		-	-	2.304	-	-	3.216	-	-	5.034	-	-	11.325	-	-	-	-	-	11.325
Subtotal: 7) Alterations-Fire Control			*-*	*-*	*5.137*	*-*	*-*	*3.216*	*-*	*-*	*5.034*	*-*	*-*	*11.325*	*-*	*-*	*-*	*-*	*-*	*11.325*
8) Alterations-Navigation Equipment																				
8.1) Navigation Sonar System (NSS) Sensor Qualification	A		-	-	17.285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) Legacy ESGN SPALTs	A		-	-	4.479	-	-	4.560	-	-	4.642	-	-	4.759	-	-	-	-	-	4.759

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy				Date: May 2017

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ K)	Qty (Each)	Total Cost ($ M)
8.3) TSSS Transducer SPALTs	A		-	-	1.242	-	-	1.472	-	-	1.820	-	-	1.855	-	-	-	-	-	1.855
8.4) Navigation Software SPALTs	A		-	-	4.276	-	-	3.938	-	-	4.009	-	-	4.081	-	-	-	-	-	4.081
8.5) GPS Antenna Refersh	A		-	-	-	-	-	-	-	-	1.500	-	-	4.025	-	-	-	-	-	4.025
Subtotal: 8) Alterations-Navigation Equipment			*-*	*-*	*27.282*	*-*	*-*	*9.970*	*-*	*-*	*11.971*	*-*	*-*	*14.720*	*-*	*-*	*-*	*-*	*-*	*14.720*
9) Alterations-Instrumentation/Missle Checkout Equipment																				
9.1) Forecast Instrumentation SPALTs	A		-	-	3.672	-	-	0.763	-	-	0.776	-	-	0.790	-	-	-	-	-	0.790
Subtotal: 9) Alterations-Instrumentation/Missle Checkout Equipment			*-*	*-*	*3.672*	*-*	*-*	*0.763*	*-*	*-*	*0.776*	*-*	*-*	*0.790*	*-*	*-*	*-*	*-*	*-*	*0.790*
10) SSI Increment 1																				
10.1) SSI Increment #1 Production (SHIPALT/SPALT)	A		3,322.583	12	39.871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) SSI Increment 1			*-*	*-*	*39.871*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
11) SSI Increment 2																				
11.1) SSI Increment #2 Production	A		384.207	29	11.142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.2) SSI Increment #2 Refresh/Redesign	A		-	-	8.215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) SSI Increment 2			*-*	*-*	*19.357*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
12) SSI Increment 4																				
12.1) Navigation SSI Increment 4 Refresh/ Redesign	A		-	-	60.760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.2) Navigation Pre-Production Units Electronics SPALT Kits	A		1,450.000	3	4.350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.3) Navigation SSI Increment 4 GPS Receiver Production	A		374.417	12	4.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.4) Navigation SSI Increment 4 Electronic SPALT Kits	A		1,000.000	21	21.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.5) Navigation SSI Increment 4 On Board Repair Parts	A		-	-	6.609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
12.6) Navigation SSI Increment 4 Engineering and Test	A		-	-	41.696	-	-	16.958	-	-	9.238	-	-	-	-	-	-	-	-	-
12.7) Navigation SSI Increment 4 SHIPALT and Installation	A		-	-	-	-	-	5.301	-	-	6.824	-	-	8.720	-	-	-	-	-	8.720
12.8) Fire Control SSi Increment 4 Refresh/ Redesign	A		-	-	27.451	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9) Fire Control SSI Increment 4 SPALT Kit Production	A		2,837.571	21	59.589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.10) Fire Control SSI Increment 4 Installation Kits	A		-	-	-	-	-	1.145	-	-	1.288	-	-	1.722	-	-	-	-	-	1.722
Subtotal: 12) SSI Increment 4			**-**	**-**	**225.948**	**-**	**-**	**23.404**	**-**	**-**	**17.350**	**-**	**-**	**10.442**	**-**	**-**	**-**	**-**	**-**	**10.442**
13) SSI Increment 8																				
13.1) Navigation SSI Increment 8 Pre-Production Gyroscope	A		400.000	30	12.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.2) Navigation SSI Increment 8 Pre-Production Inertial Navigation System	A		1,500.000	8	12.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.3) Navigation SSI Increment 8 Refresh/ Redesign	A		-	-	119.802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.4) Navigation SSI Increment 8 Engineering and Test	A		-	-	50.825	-	-	60.403	-	-	50.954	-	-	40.385	-	-	-	-	-	40.385
13.5) Navigation SSI Increment 8 Independent verification and validation	A		-	-	3.193	-	-	3.443	-	-	3.675	-	-	3.755	-	-	-	-	-	3.755
13.6) Navigation SSI Increment 8 Production Gyroscope	A		-	-	-	375.000	50	18.750	382.500	50	19.125	390.150	60	23.409	-	-	-	390.150	60	23.409
13.7) Navigation SSI Increment 8 SPALT Engineering drawings	A		-	-	3.789	-	-	3.630	-	-	2.645	-	-	-	-	-	-	-	-	-
13.8) Navigation SSI Increment 8 On Board Repair Parts (OBRPs)	A		-	-	-	-	-	-	-	-	-	-	-	3.000	-	-	-	-	-	3.000
13.9) Navigation SSI Increment 8 Production INS	A		-	-	-	-	-	-	-	-	-	1,421.000	6	8.526	-	-	-	1,421.000	6	8.526

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy			**Date:** May 2017

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
13.10) Navigation SSI Increment 8 SHIPALT / Installation	A		-	-	-	-	-	-	-	-	-	-	-	1.426	-	-	-	-	-	1.426
Subtotal: 13) SSI Increment 8			**-**	**-**	**201.609**	**-**	**-**	**86.226**	**-**	**-**	**76.399**	**-**	**-**	**80.501**	**-**	**-**	**-**	**-**	**-**	**80.501**
14) SSI Increment 10																				
14.1) Fire Control SSI Increment 10 Shipboard Data System (SDS) SPALT Refresh	A		-	-	5.804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.2) Fire Control SSI Increment 10 SDS SPALT Kits	A		-	-	-	253.000	14	3.542	-	-	-	-	-	-	-	-	-	-	-	-
14.3) Fire Control SSI Increment 10 SDS Install	A		-	-	-	-	-	-	-	-	0.490	-	-	-	-	-	-	-	-	-
Subtotal: 14) SSI Increment 10			**-**	**-**	**5.804**	**-**	**-**	**3.542**	**-**	**-**	**0.490**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
15) SSI Increment 11																				
15.1) Launcher SSI Increment 11 LIS Redesign	A		-	-	10.288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.2) Launcher Increment 11 System Integration Testing	A		-	-	5.404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.3) Launcher SSI Increment 11 LIS Support Equipment/ Fiberoptic Cables	A		-	-	3.496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.4) Launcher SSI Increment 11 LIS Engineering and Test	A		-	-	10.973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units	A		1,840.500	12	22.086	-	-	-	1,606.000	2	3.212	-	-	-	-	-	-	-	-	-
15.6) Launcher SSI Increment 11 LIS Fiberoptic Cables Installation	A		-	-	1.038	-	-	0.529	-	-	0.539	-	-	1.096	-	-	-	-	-	1.096
15.7) Fire Control SSI Increment 11 LIS SPALT Installs	A		-	-	2.907	-	-	1.529	-	-	1.341	-	-	1.847	-	-	-	-	-	1.847
Subtotal: 15) SSI Increment 11			**-**	**-**	**56.192**	**-**	**-**	**2.058**	**-**	**-**	**5.092**	**-**	**-**	**2.943**	**-**	**-**	**-**	**-**	**-**	**2.943**
16) SSI Increment 13																				
16.1) Instrumentation/ Missile SSI Increment 13 MTRE Refresh	A		-	-	6.994	-	-	2.672	-	-	2.920	-	-	2.739	-	-	-	-	-	2.739

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																					Date: May 2017	

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
16.2) Navigation SSI Increment 13 Refresh/ Redesign	A		-	-	7.601	-	-	14.374	-	-	17.649	-	-	14.942	-	-	-	-	-	14.942
16.3) Navigation SSI Increment 13 Shipalt	A		-	-	-	-	-	-	-	-	0.210	-	-	0.365	-	-	-	-	-	0.365
16.4) Navigation SSI Increment 13 Independent Verification & Validation	A		-	-	-	-	-	-	-	-	0.333	-	-	0.547	-	-	-	-	-	0.547
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production	A		-	-	-	-	-	-	-	-	-	536.000	6	3.216	-	-	-	536.000	6	3.216
16.7) Navigation SSI Increment 13 On Board Repair Parts (OBRPs)	A		-	-	-	-	-	-	-	-	-	-	-	0.551	-	-	-	-	-	0.551
16.9) Fire Control SSI Increment 13 Refresh/ Redesign	A		-	-	28.489	-	-	14.209	-	-	13.937	-	-	13.658	-	-	-	-	-	13.658
Subtotal: 16) SSI Increment 13			**-**	**-**	**43.084**	**-**	**-**	**31.255**	**-**	**-**	**35.049**	**-**	**-**	**36.018**	**-**	**-**	**-**	**-**	**-**	**36.018**
17) SSI Increment 15																				
17.1) Navigation SSI Increment 15 Refresh/ Redesign	A		-	-	-	-	-	-	-	-	-	-	-	0.935	-	-	-	-	-	0.935
17.2) Fire Control SSI Increment 15 Refresh/ Redesign	A		-	-	-	-	-	-	-	-	-	-	-	1.417	-	-	-	-	-	1.417
Subtotal: 17) SSI Increment 15			**-**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2.352**	**-**	**-**	**-**	**-**	**-**	**2.352**
18) Training Support Equipment																				
18.1) Training Support Equipment	A		-	-	68.442	-	-	20.758	-	-	8.252	-	-	11.701	-	-	-	-	-	11.701
Subtotal: 18) Training Support Equipment			**-**	**-**	**68.442**	**-**	**-**	**20.758**	**-**	**-**	**8.252**	**-**	**-**	**11.701**	**-**	**-**	**-**	**-**	**-**	**11.701**
19) New START																				
19.1) Ballast Production & Support Equipment	A		-	-	8.175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.2) Steel Closure Design, Procurement & Material	A		-	-	31.771	-	-	1.842	-	-	1.535	-	-	1.535	-	-	-	-	-	1.535
19.3) Material Support, Removed/ Converted Hardware	A		-	-	15.900	-	-	13.200	-	-	2.800	-	-	-	-	-	-	-	-	-
Subtotal: 19) New START			**-**	**-**	**55.846**	**-**	**-**	**15.042**	**-**	**-**	**4.335**	**-**	**-**	**1.535**	**-**	**-**	**-**	**-**	**-**	**1.535**
Total			**-**	**-**	**961.421**	**-**	**-**	**240.677**	**-**	**-**	**215.138**	**-**	**-**	**246.221**	**-**	**-**	**-**	**-**	**-**	**246.221**

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		**Date:** May 2017
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

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: FY 2018 Navy	Date: May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	494.064	96.040	144.715	129.972	0.000	129.972	150.750	177.643	259.455	239.264	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	494.064	96.040	144.715	129.972	0.000	129.972	150.750	177.643	259.455	239.264	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	494.064	96.040	144.715	129.972	0.000	129.972	150.750	177.643	259.455	239.264	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	2.667	1.771	4.744	-	4.744	1.889	3.143	2.765	2.443	Continuing	Continuing
Flyaway Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

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. 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 Tactical Local Area Network (TacLAN); Information Assurance (IA); Onboard Team Trainer (OBTT); and Command, Control, Computer and Intelligence Maintenance Tool (C3IMT).

VB034 - SUBMARINE COMBAT CONTROL SYSTEM MODERNIZATION PROGRAM

This cost code procures hardware and software upgrades for the AN/BYG-1 system for installation on all submarine platforms. 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 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, 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. Funds are for the installation of Combat Control System equipment included in the Fleet Modernization Program.

VB800 - ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM

The AN/BPS-15/16 Radar with Submarine Electronic Charting Display Information System - Navy (ECDIS-N) is installed on all U.S. Navy submarine platforms. Program responsibilities for components associated with the AN/BPS-15/16, specifically the mast, mast components and hydraulic support systems as well as the unique submarine specific navigation requirements have been transferred from Program Executive Office, Integrated Warfare Systems (PEO IWS) Above Water Sensors Directorate [Line Item Number 0670] to Program Executive Office Submarines (PEO SUB) to more closely align AN/BPS-15/16 and Submarine ECDIS-N with the other Submarine Combat Systems and address shortfalls in both radar and ECDIS-N. PEO SUB Submarine Combat and Weapons Control Program Office assumed program acquisition, contractual, financial, engineering and logistical responsibilities [under Line Item Number 5420] for submarine ECDIS-N systems that are part of the AN/BPS-15/16 Radar System in support of all baselines. This will include conducting submarine Voyage Management System (VMS) 8.3.4 and VMS 9.3 integration, testing, ECDIS-N certification, and fielding responsibilities in support of all baselines.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

This is a zero sum transfer from Budget Line Item 0670, Item Number GW038 to Budget Line Item 5420, Item Number VB800.

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
The SSP funding 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. 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. The TTWCS updates are critical to the ability to fire Tomahawk missiles from the SSGNs. The increase in FY18 is attributable to the support for the TTWCS 5.6 update required to maintain compatibility with modernized TOMAHAWK missiles. The modernized TOMAHAWK supports emerging missions for which the SSGN is the prime platform for deployment. The TTWCS updates are critical to the ability to fire Tomahawk missiles from the SSGNs.

VB700 - PAYLOAD PROCUREMENT
Procurement of COTS/GOTS payloads for integration, verification, and validation. Beginning in FY18 UAS shipset procurements and associated integration, verification, and validation efforts.

OTHER INFORMATION
Developmental efforts are funded by Program Element 0604562N within the SSN Combat Control System Improvement Program F0236.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy							**Date:** May 2017		

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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				- / 242.278	- / 35.678	- / 41.594	- / 40.406	- / -	- / 40.406
P-40a	VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS				- / 62.858	- / 0.000	- / 7.040	- / 1.799	- / 0.000	- / 1.799
P-40a	VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS				- / 22.053	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40a	VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS				- / 13.250	- / 3.024	- / 7.424	- / 7.565	- / 0.000	- / 7.565
P-3a	1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1 (UPGRADE)				- / 0.000	- / 8.348	- / 25.597	- / 32.631	- / 0.000	- / 32.631
P-3a	6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS (UPGRADE)				- / 153.625	- / 35.158	- / 17.287	- / 18.855	- / 0.000	- / 18.855
P-3a	7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS (UPGRADE)				- / 0.000	- / 13.832	- / 45.773	- / 28.716	- / 0.000	- / 28.716
P-40	**Total Gross/Weapon System Cost**				**- / 494.064**	**- / 96.040**	**- / 144.715**	**- / 129.972**	**- / 0.000**	**- / 129.972**

*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.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) VB011: COMBAT SYSTEM TECH REFRESH/LEGACY INTEGRATION																				
1.1) VB011: ECP/ AUXILLARY EQUIPMENT / LEGACY INTEGRATION	A		-	-	3.439	-	-	2.151	-	-	2.155	-	-	2.159	-	-	-	-	-	2.159
1.2) VB011: WEAPON LAUNCH SYSTEMS TECH INSERTION [1]	A		-	-	14.281	-	-	9.860	-	-	15.280	-	-	11.238	-	-	-	-	-	11.238
1.3) VB011: TACLAN/ IA [2]	A		-	-	106.204	-	-	12.277	-	-	17.764	-	-	12.735	-	-	-	-	-	12.735
Subtotal: 1) VB011: COMBAT SYSTEM TECH REFRESH/LEGACY INTEGRATION			*-*	*-*	*123.924*	*-*	*-*	*24.288*	*-*	*-*	*35.199*	*-*	*-*	*26.132*	*-*	*-*	*-*	*-*	*-*	*26.132*
2) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM																				
2.1) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM [3]	A		-	-	-	-	-	3.053	-	-	3.095	-	-	3.269	-	-	-	-	-	3.269
Subtotal: 2) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM			*-*	*-*	*0.000*	*-*	*-*	*3.053*	*-*	*-*	*3.095*	*-*	*-*	*3.269*	*-*	*-*	*-*	*-*	*-*	*3.269*
3) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING																				
3.1) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING	A		-	-	58.597	-	-	1.658	-	-	1.688	-	-	1.720	-	-	-	-	-	1.720
Subtotal: 3) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING			*-*	*-*	*58.597*	*-*	*-*	*1.658*	*-*	*-*	*1.688*	*-*	*-*	*1.720*	*-*	*-*	*-*	*-*	*-*	*1.720*
4) VB997: SSGN SUSTAINING SUPPORT																				
4.1) VB997: SSGN SUSTAINING SUPPORT [4]	A		-	-	59.757	-	-	6.679	-	-	1.612	-	-	8.411	-	-	-	-	-	8.411
Subtotal: 4) VB997: SSGN SUSTAINING SUPPORT			*-*	*-*	*59.757*	*-*	*-*	*6.679*	*-*	*-*	*1.612*	*-*	*-*	*8.411*	*-*	*-*	*-*	*-*	*-*	*8.411*
5) VB700: PAYLOAD PROCUREMENT																				
5.1) VB700: PAYLOAD PROCUREMENT [5]	A		-	-	-	-	-	-	-	-	-	874,000.00	1	0.874	-	-	-	874,000.00	1	0.874
Subtotal: 5) VB700: PAYLOAD PROCUREMENT			*-*	*-*	*0.000*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0.874*	*-*	*-*	*-*	*-*	*-*	*0.874*
Total			-	-	242.278	-	-	35.678	-	-	41.594	-	-	40.406	-	-	-	-	-	40.406

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-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		**Date:** May 2017
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

Footnotes:

(1) 1.3) The first of the Block III Virginia Class submarines will be going into service in FY16. This funding includes the sustainment of the Common Weapon Launcher (CWL) for Block III. Also includes the obsolescence management for Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II.

(2) 1.4) FY17 efforts include transition of TACLAN to Common Infrastructure Services (CIS) which consolidates common functions used by multiple subsystems. Also includes funding to field cybersecurity improvements to meet new, more stringent requirements.

(3) 2.1) Minor cost growth in FY18 attributed to managing several Voyage Management System (VMS) efforts for the eradication of WINDOWS XP.

(4) 4.1) The increase in FY18 is attributable to the support for the TTWCS 5.6 update required to maintain compatibility with modernized TOMAHAWK missiles. The modernized TOMAHAWK supports emerging missions for which the SSGN is the prime platform for deployment. The TTWCS updates are critical to the ability to fire Tomahawk missiles from the SSGNs.

(5) 7.1) 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.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems	Aggregated Items Title: VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
EQUIPMENT -- Procurement	A		5,327K	9	47.943	-	-	-	7,040K	1	7.040	-	-	-	-	-	-	-	-	-
EQUIPMENT -- Installation	A		-	-	14.915	-	-	-	-	-	-	-	-	1.799	-	-	-	-	-	1.799
Subtotal: B Kits/Recurrring			*-*	*-*	*62.858*	*-*	*-*	*-*	*-*	*-*	*7.040*	*-*	*-*	*1.799*	*-*	*-*	*-*	*-*	*-*	*1.799*
Total			**-**	**-**	**62.858**	**-**	**-**	**0.000**	**-**	**-**	**7.040**	**-**	**-**	**1.799**	**-**	**-**	**0.000**	**-**	**-**	**1.799**

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

Remarks:
Models of Systems Affected: TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS
Type Modification: UPGRADE

This program will provide upgrades for submarine combat systems with upgraded combat control and tactical control hardware and software. This program funds the procurement and installation of the first Virginia Class upgrade and, beginning in FY10, installation of the second and third upgrade kits as well as procurement and installation of all subsequent Virginia Class AN/BYG-1 upgrade kits. Milestone Decision Authority (MDA) Production Reviews are being held on an annual basis.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy | **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems	Aggregated Items Title: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
EQUIPMENT -- Procurement	A		2,728K	4	10.912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EQUIPMENT -- Installation	A		-	-	11.141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurrring			**-**	**-**	**22.053**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total			**-**	**-**	**22.053**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**	**-**	**-**	**0.000**

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

Remarks:
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS
Type Modification: UPGRADE

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.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																			Date: May 2017		

Appropriation / Budget Activity / Budget Sub Activity:
1810N / 04 / 5

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

Aggregated Items Title:
VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
EQUIPMENT -- Procurement	A		2,435K	3	7.305	3,024K	1	3.024	3,078K	1	3.078	3,137K	1	3.137	-	-	-	3,137K	1	3.137
EQUIPMENT -- Installation	A		-	-	5.945	-	-	-	-	-	4.346	-	-	4.428	-	-	-	-	-	4.428
Subtotal: B Kits/Recurrring			**-**	**-**	**13.250**	**-**	**-**	**3.024**	**-**	**-**	**7.424**	**-**	**-**	**7.565**	**-**	**-**	**-**	**-**	**-**	**7.565**
Total			**-**	**-**	**13.250**	**-**	**-**	**3.024**	**-**	**-**	**7.424**	**-**	**-**	**7.565**	**-**	**-**	**0.000**	**-**	**-**	**7.565**

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

Remarks:
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS
Type Modification: UPGRADE

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.

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	0.000	8.348	25.597	32.631	0.000	32.631
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	0.000	8.348	25.597	32.631	0.000	32.631
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**0.000**	**8.348**	**25.597**	**32.631**	**0.000**	**32.631**
(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.

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total 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	- / -	2 / 8.348	3 / 12.747	3 / 12.990	- / -	3 / 12.990
Subtotal: Recurring	- / 0.000	- / 8.348	- / 12.747	- / 12.990	- / -	- / 12.990
Subtotal: VB034 SSBN MODERNIZATION WITH AN/ BYG-1	- / -	2 / 8.348	3 / 12.747	3 / 12.990	- / -	3 / 12.990
Subtotal: Procurement, All Modification Items	- / 0.000	- / 8.348	- / 12.747	- / 12.990	- / -	- / 12.990
Installation						
Modification Item 1 of 1: VB034 SSBN MODERNIZATION WITH AN/BYG-1	- / 0.000	- / 0.000	- / 12.850	- / 19.641	- / 0.000	- / 19.641
Subtotal: Installation	- / 0.000	- / -	- / 12.850	- / 19.641	- / -	- / 19.641
Total						
Total Cost (Procurement + Support + Installation)	**0.000**	**8.348**	**25.597**	**32.631**	**0.000**	**32.631**

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018
Contract Dates	Mar 2016	Mar 2017	Mar 2018
Delivery Dates	Mar 2017	Mar 2018	Mar 2019

Installation Information

Method of Implementation: AIT:: Installation Name: EQUIPMENT

Installation Cost	Prior Years Qty *(Each)* / Total Cost *($ M)*	FY 2016 Qty *(Each)* / Total Cost *($ M)*	FY 2017 Qty *(Each)* / Total Cost *($ M)*	FY 2018 Base Qty *(Each)* / Total Cost *($ M)*	FY 2018 OCO Qty *(Each)* / Total Cost *($ M)*	FY 2018 Total Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	2 / 12.850	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	3 / 19.641	0 / 0.000	3 / 19.641
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 12.850	3 / 19.641	0 / 0.000	3 / 19.641

Installation Schedule

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	1	1	-	-	1	1	1	-
Out	-	-	-	-	-	-	1	1	-	-	1	1	1

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	153.625	35.158	17.287	18.855	0.000	18.855
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	153.625	35.158	17.287	18.855	0.000	18.855
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**153.625**	**35.158**	**17.287**	**18.855**	**0.000**	**18.855**
(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.

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total Qty (Each) / Total Cost ($ M)
Procurement						
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS						
B Kits						
Recurring						
2.1.1) EQUIPMENT - NonOrganic	31 / 84.879	6 / 18.177	- / -	6 / 18.855	- / -	6 / 18.855
Subtotal: Recurring	- / 84.879	- / 18.177	- / -	- / 18.855	- / -	- / 18.855
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	31 / 84.879	6 / 18.177	- / -	6 / 18.855	- / -	6 / 18.855
Subtotal: Procurement, All Modification Items	- / 84.879	- / 18.177	- / -	- / 18.855	- / -	- / 18.855
Installation						
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	- / 68.746	- / 16.981	- / 17.287	- / 0.000	- / 0.000	- / 0.000
Subtotal: Installation	- / 68.746	- / 16.981	- / 17.287	- / -	- / -	- / -
Total						
Total Cost (Procurement + Support + Installation)	**153.625**	**35.158**	**17.287**	**18.855**	**0.000**	**18.855**

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016**	**FY 2017**	**FY 2018**
Contract Dates	Mar 2016		Mar 2018
Delivery Dates	Mar 2017		Mar 2019

Installation Information

Method of Implementation: AIT:: Installation Name: EQUIPMENT

Installation Cost	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
	Qty *(Each) /* Total Cost *($ M)*	Qty *(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	25 / 68.746	6 / 16.981	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	6 / 17.287	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	25 / 68.746	6 / 16.981	6 / 17.287	- / -	- / -	- / -

Installation Schedule

	PYS	**FY 2016**				**FY 2017**				**FY 2018**			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
In	25	2	2	2	-	2	2	2	-	-	-	-	-
Out	23	2	2	2	2	-	2	2	2	-	-	-	-

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	13.832	45.773	28.716	0.000	28.716
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	13.832	45.773	28.716	0.000	28.716
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**13.832**	**45.773**	**28.716**	**0.000**	**28.716**
(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.

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Exhibit P-3a, Individual Modification: FY 2018 Navy				**Date:** May 2017	
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** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** 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 [6]	- / -	2 / 13.832	6 / 42.243	3 / 21.522	- / -	3 / 21.522
Subtotal: Recurring	- / 0.000	- / 13.832	- / 42.243	- / 21.522	- / -	- / 21.522
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS	- / -	2 / 13.832	6 / 42.243	3 / 21.522	- / -	3 / 21.522
Subtotal: Procurement, All Modification Items	- / 0.000	- / 13.832	- / 42.243	- / 21.522	- / -	- / 21.522
Installation						
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS	- / 0.000	- / 0.000	- / 3.530	- / 7.194	- / 0.000	- / 7.194
Subtotal: Installation	- / 0.000	- / -	- / 3.530	- / 7.194	- / -	- / 7.194
Total						
Total Cost (Procurement + Support + Installation)	**0.000**	**13.832**	**45.773**	**28.716**	**0.000**	**28.716**

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016**	**FY 2017**	**FY 2018**
Contract Dates	Mar 2016	Mar 2017	Mar 2018
Delivery Dates	Mar 2017	Mar 2018	Mar 2019

Installation Information

Method of Implementation: AIT:: Installation Name: EQUIPMENT

Installation Cost	**Prior Years** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	2 / 3.530	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	4 / 7.194	0 / 0.000	4 / 7.194
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 3.530	4 / 7.194	0 / 0.000	4 / 7.194

Installation Schedule

	PYS	**FY 2016**				**FY 2017**				**FY 2018**			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
In	-	-	-	-	-	-	1	1	-	2	1	1	-
Out	-	-	-	-	-	-	-	1	1	-	2	1	1

Footnotes:

(6) The installation costs for 2 Kits procured as part of the PB17 Request for Additional Appropriations (RAA) will be addressed in PB19 submission. Pending resolution of the RAA, these kits installation funding is being maintained in the "To Complete" column of the Installation Information Table.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	Date: May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	7.559	30.189	36.431	23.209	0.000	23.209	22.597	22.680	23.155	23.620	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	7.559	30.189	36.431	23.209	0.000	23.209	22.597	22.680	23.155	23.620	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**7.559**	**30.189**	**36.431**	**23.209**	**0.000**	**23.209**	**22.597**	**22.680**	**23.155**	**23.620**	**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:

ASW SUPPORT EQUIPMENT

For FY 2015 and following, all Submarine ASW Support Equipment OPN BLI 5431, Surface ASW Support Equipment OPN BLI 5449, and ASW Range Support Equipment OPN BLI 5455 funding was moved under ASW Support Equipment OPN BLI 5429 for budget consolidation purposes.

Cost Codes VC000/VC830/VC5IN: Funding for modifications and improvements to SSN 688, SSBN 726 and SSN21 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.

Cost Codes VC008/VC009/VC900/VC6IN - SURFACE ASW SUPPORT EQUIPMENT: Funding to procure Reliability, Maintainability and Availability (RM&A) and safety modifications through the Ordnance Alteration (ORDALT) process to Anti-Submarine Warfare (ASW) Fire Control, Surface Vessel Torpedo Tubes (SVTT), and related ASW Fire Control/SVTT support and test equipment to maintain the current performance envelope. Modification requirements arise 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.

Cost Codes VC001/VC007/VC831/VC832/VC851/VC970 - ASW RANGE SUPPORT EQUIPMENT: 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 US 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 and Nanoose). UTRE ranges include Portable Offshore Training Range (POTR) and Portable Undersea Training Range (PUTR). FORACS ranges include; Andros Island and Southern California.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

[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, 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 / VC008 - ASWCS FIRE CONTROL ORDALTS]: SURFACE ASW SUPPORT EQUIPMENT VC008 Cost Elements/Descriptions as follows:

ASWCS - UFCS/Control Panel ORDALTs: Provides funding for ORDALT kits for the ASW Underwater Fire Control System (UFCS) and Control Panel (MK309), 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 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 - UCFS/Control Panel ORDALTS: FY 2017 ($1.581M) to FY 2018 ($1.671M) increase is attributable to the effect of the decrease in budget controls in FY 2017 due to roughly half of the Bipartisan Budget Act (BBA) reduction being applied to this effort. FY 2018 represents the ramping up/restoral of ASWCS - UCFS/CONTROL PANEL ORDALT efforts to required levels.

ASWCS - Production Engineering Support: 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: 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]: SURFACE ASW SUPPORT EQUIPMENT VC009 Cost Elements/Descriptions as follows:

SVTT - MK32 ORDALTS: 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 - MK32 ORDALTS: FY 2017 ($1.334M) to FY 2018 ($1.394M) increase is attributable to the effect of the decrease in budget controls in FY 2017 due to roughly half of the Bipartisan Budget Act (BBA) reduction being applied to this effort. FY 2018 represents the ramping up/restoral of SVTT - MK32 ORDALT efforts to required levels.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	**Date:** May 2017

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

SVTT - Production Engineering: 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: 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]: SURFACE ASW SUPPORT EQUIPMENT VC900 Cost Element/Description as Follows:

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 - N96]: SURFACE ASW SUPPORT EQUIPMENT VC6IN Cost Element/Description as follows:

Funds the installation of all ASW Fire Control (under Cost Code VC008) and SVTT (under Cost Code VC009) ORDALTs/SCDs. ORDALT/SCD 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 (3)]: ANTI-SUBMARINE WARFARE (ASW) RANGE 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)

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 - N98]: 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. Funding plus-up starting in FY14 is for an obsolescence driven upgrade to the submarine Underwater Tracking System (UTS).   Funding will provide for procurement of underwater tracking equipment for submarines including 65 UTS shipboard units, TEMPALT modifications and training. (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.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

[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]: Review of proposed acquisition documentation to ensure all logistics requirements are included.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	SUB WEAPONS LAUNCHING/HANDLING SUPPORT EQUIPMENT				- / 3.876	- / 3.485	- / 3.755	- / 3.930	- / -	- / 3.930
P-40a	SURFACE ASW SUPPORT EQUIPMENT				- / 3.683	- / 3.709	- / 3.508	- / 3.680	- / -	- / 3.680
P-40a	ASW Range Support Equipment (3)				- / 0.000	- / 22.995	- / 29.168	- / 15.599	- / -	- / 15.599
P-40	Total Gross/Weapon System Cost				- / 7.559	- / 30.189	- / 36.431	- / 23.209	- / 0.000	- / 23.209

*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: The items contained within this budget line were funded under other OPN Budget Line Items in FY14 and prior.

SURFACE ASW SUPPORT EQUIPMENT: Funding to procure Reliability, Maintainability and Availability (RM&A) and safety modifications through the Ordnance Alteration (ORDALT) process to Anti-Submarine Warfare (ASW) Fire Control, Surface Vessel Torpedo Tubes (SVTT), and related ASW Fire Control/SVTT support and test equipment to maintain the current performance envelope. Modification requirements arise 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.

SURFACE ASW SUPPORT EQUIPMENT - OVERALL YEAR-TO-YEAR BUDGET CONTROL COMPARISON:
- FY17 budget is $0.201M less than FY16 due to a reduction in FY17 controls resulting from targeted Bipartisan Budget Act (BBA) reductions.
- FY18 budget is $0.171M more than FY17 due to the ramping up/restoral of ASWCS and SVTT MK32 ORDALTs to required procurement levels in FY18. See footnotes on P-40a exhibit for details at the individual cost item level.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																	Date: May 2017		
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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		-	-	0.200	-	-	0.100	-	-	0.114	-	-	0.081	-	-	-	-	-	0.081
1.2) TT/TEP/ICL/ WSHS	A		-	-	1.203	-	-	1.019	-	-	1.000	-	-	0.910	-	-	-	-	-	0.910
Subtotal: 1) VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT			*-*	*-*	*1.403*	*-*	*-*	*1.119*	*-*	*-*	*1.114*	*-*	*-*	*0.991*	*-*	*-*	*-*	*-*	*-*	*0.991*
2) VC000 ORDALT PROCUREMENT																				
2.1) O/A MATERIAL	A		50,000.00	5	0.250	50,000.00	5	0.250	50,000.00	6	0.300	50,000.00	6	0.300	-	-	-	50,000.00	6	0.300
Subtotal: 2) VC000 ORDALT PROCUREMENT			*-*	*-*	*0.250*	*-*	*-*	*0.250*	*-*	*-*	*0.300*	*-*	*-*	*0.300*	*-*	*-*	*-*	*-*	*-*	*0.300*
3) VC000 - TEST EQUIPMENT																				
3.1) BORE GAGE	A		-	-	0.075	-	-	0.047	-	-	0.009	-	-	-	-	-	-	-	-	-
3.2) MISC. TEST EQUIPMENT	A		-	-	0.075	-	-	0.075	-	-	0.075	-	-	0.090	-	-	-	-	-	0.090
3.3) TEST FACILITY EQUIPMENT	A		-	-	0.100	-	-	0.091	-	-	0.118	-	-	0.079	-	-	-	-	-	0.079
Subtotal: 3) VC000 - TEST EQUIPMENT			*-*	*-*	*0.250*	*-*	*-*	*0.213*	*-*	*-*	*0.202*	*-*	*-*	*0.169*	*-*	*-*	*-*	*-*	*-*	*0.169*
4) VC830 - PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING	A		-	-	0.250	-	-	0.200	-	-	0.160	-	-	0.250	-	-	-	-	-	0.250
Subtotal: 4) VC830 - PRODUCTION ENGINEERING			*-*	*-*	*0.250*	*-*	*-*	*0.200*	*-*	*-*	*0.160*	*-*	*-*	*0.250*	*-*	*-*	*-*	*-*	*-*	*0.250*
5) VC5IN - ORDALT INSTALLATION																				
5.1) VC5IN O/A INSTALLATION	A		-	-	1.723	-	-	1.703	-	-	1.979	-	-	2.220	-	-	-	-	-	2.220
Subtotal: 5) VC5IN - ORDALT INSTALLATION			*-*	*-*	*1.723*	*-*	*-*	*1.703*	*-*	*-*	*1.979*	*-*	*-*	*2.220*	*-*	*-*	*-*	*-*	*-*	*2.220*
Total			-	-	3.876	-	-	3.485	-	-	3.755	-	-	3.930	-	-	-	-	-	3.930

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.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy	Date: May 2017
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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/ CONTROL PANEL ORDALTS [2]			-	-	1.704	-	-	1.691	-	-	1.581	-	-	1.672	-	-	-	-	-	1.672
1.2) ASWCS - PRODUCTION ENGINEERING SUPPORT			-	-	0.083	-	-	0.087	-	-	0.089	-	-	0.091	-	-	-	-	-	0.091
1.3) ASWCS - ACCEPTANCE TEST & EVALUATION			-	-	0.050	-	-	0.050	-	-	0.050	-	-	0.051	-	-	-	-	-	0.051
Subtotal: 1) VC008 - ASWCS FIRE CONTROL ORDALTS			*-*	*-*	*1.837*	*-*	*-*	*1.828*	*-*	*-*	*1.720*	*-*	*-*	*1.814*	*-*	*-*	*-*	*-*	*-*	*1.814*
2) VC009 - TORPEDO TUBE ORDALTS																				
2.1) SVTT - MK32 ORDALTS [3]			-	-	1.405	-	-	1.438	-	-	1.334	-	-	1.413	-	-	-	-	-	1.413
2.2) SVTT - PRODUCTION ENGINEERING SUPPORT			-	-	0.083	-	-	0.083	-	-	0.089	-	-	0.091	-	-	-	-	-	0.091
2.3) SVTT - ACCEPTANCE TEST & EVALUATION			-	-	0.050	-	-	0.050	-	-	0.050	-	-	0.051	-	-	-	-	-	0.051
Subtotal: 2) VC009 - TORPEDO TUBE ORDALTS			*-*	*-*	*1.538*	*-*	*-*	*1.571*	*-*	*-*	*1.473*	*-*	*-*	*1.555*	*-*	*-*	*-*	*-*	*-*	*1.555*
3) VC900 - CONSULTING SERVICES																				
3.1) CONSULTING SERVICES			-	-	0.097	-	-	0.098	-	-	0.101	-	-	0.103	-	-	-	-	-	0.103
Subtotal: 3) VC900 - CONSULTING SERVICES			*-*	*-*	*0.097*	*-*	*-*	*0.098*	*-*	*-*	*0.101*	*-*	*-*	*0.103*	*-*	*-*	*-*	*-*	*-*	*0.103*
4) VC6IN - INSTALLATION OF EQUIPMENT - N96																				
4.1) ASWCS - FIRE CONTROL ORDALTS			-	-	0.110	-	-	0.108	-	-	0.110	-	-	0.105	-	-	-	-	-	0.105
4.2) SVTT - TORPEDO TUBE ORDALTS			-	-	0.101	-	-	0.104	-	-	0.104	-	-	0.103	-	-	-	-	-	0.103
Subtotal: 4) VC6IN - INSTALLATION OF EQUIPMENT - N96			*-*	*-*	*0.211*	*-*	*-*	*0.212*	*-*	*-*	*0.214*	*-*	*-*	*0.208*	*-*	*-*	*-*	*-*	*-*	*0.208*
Total			-	-	3.683	-	-	3.709	-	-	3.508	-	-	3.680	-	-	-	-	-	3.680

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

Footnotes:

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		**Date:** May 2017
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

[2] SURFACE ASW SUPPORT EQUIPMENT - 1.1 ASWCS - UCFS/CONTROL PANEL ORDALTS: FY 2017 ($1.581M) to FY 2018 ($1.671M) increase is attributable to the effect of the decrease in budget controls in FY 2017 due to roughly half of the Bipartisan Budget Act (BBA) reduction being applied to this effort. FY 2018 represents the ramping up/restoral of ASWCS - UCFS/CONTROL PANEL ORDALT efforts to required levels.

[3] SURFACE ASW SUPPORT EQUIPMENT - 2.1 SVTT - MK32 ORDALTS: FY 2017 ($1.334M) to FY 2018 ($1.413M) increase is attributable to the effect of the decrease in budget controls in FY 2017 due to roughly half of the Bipartisan Budget Act (BBA) reduction being applied to this effort. FY 2018 represents the ramping up/restoral of SVTT - MK32 ORDALT efforts to required levels.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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 (3)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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		-	-	-	-	-	4.092	-	-	3.292	-	-	2.534	-	-	-	-	-	2.534
Subtotal: 1) VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Acc			*-*	*-*	*0.000*	*-*	*-*	*4.092*	*-*	*-*	*3.292*	*-*	*-*	*2.534*	*-*	*-*	*-*	*-*	*-*	*2.534*
2) VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N98																				
2.1) VC002 - UTRE (S05)	A		-	-	-	-	-	3.487	-	-	2.757	-	-	1.732	-	-	-	-	-	1.732
Subtotal: 2) VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N98			*-*	*-*	*0.000*	*-*	*-*	*3.487*	*-*	*-*	*2.757*	*-*	*-*	*1.732*	*-*	*-*	*-*	*-*	*-*	*1.732*
3) VC003 - TOWED TARGETS																				
3.1) VC003 - TOWED TARGETS (SHIPS)	A		-	-	-	-	-	1.477	-	-	1.248	-	-	1.016	-	-	-	-	-	1.016
Subtotal: 3) VC003 - TOWED TARGETS			*-*	*-*	*0.000*	*-*	*-*	*1.477*	*-*	*-*	*1.248*	*-*	*-*	*1.016*	*-*	*-*	*-*	*-*	*-*	*1.016*
4) VC004 - INSTRUMENTATION																				
4.1) VC004 - INSTRUMENTATION (SHIPS)	A		-	-	-	-	-	0.243	-	-	0.200	-	-	0.176	-	-	-	-	-	0.176
Subtotal: 4) VC004 - INSTRUMENTATION			*-*	*-*	*0.000*	*-*	*-*	*0.243*	*-*	*-*	*0.200*	*-*	*-*	*0.176*	*-*	*-*	*-*	*-*	*-*	*0.176*
5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET) [4]																				
5.1) VC005 - HSMST (SHIPS) [5]	A		-	-	-	189,898.31	59	11.204	185,558.00	104	19.298	197,576.00	40	7.903	-	-	-	197,576.00	40	7.903
Subtotal: 5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)			*-*	*-*	*0.000*	*-*	*-*	*11.204*	*-*	*-*	*19.298*	*-*	*-*	*7.903*	*-*	*-*	*-*	*-*	*-*	*7.903*
6) VC006 - SDST (Ship Deployable Surface Target)																				
6.1) VC006 - SDST (Ship Deployable Surface Target) (SHIPS)	A		-	-	-	-	-	0.160	-	-	0.123	-	-	0.124	-	-	-	-	-	0.124
Subtotal: 6) VC006 - SDST (Ship Deployable Surface Target)			*-*	*-*	*0.000*	*-*	*-*	*0.160*	*-*	*-*	*0.123*	*-*	*-*	*0.124*	*-*	*-*	*-*	*-*	*-*	*0.124*
7) VC007 - FACT (Fast Attack Craft Target)																				
7.1) VC007 - FACT (Fast Attack Craft Target) (SHIPS)	A		-	-	-	657,000.00	1	0.657	670,037.00	1	0.670	683,437.00	1	0.683	-	-	-	683,437.00	1	0.683
Subtotal: 7) VC007 - FACT (Fast Attack Craft Target)			*-*	*-*	*0.000*	*-*	*-*	*0.657*	*-*	*-*	*0.670*	*-*	*-*	*0.683*	*-*	*-*	*-*	*-*	*-*	*0.683*
8) VC831/2 - PRODUCTION ENGINEERING																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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 (3)

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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-N98/US FORACS - N96 (S05)	A		-	-	-	-	-	0.411	-	-	0.400	-	-	0.381	-	-	-	-	-	0.381
8.2) VC832 - PRODUCTION ENGINEERING (Ships)	A		-	-	-	-	-	0.650	-	-	0.600	-	-	0.519	-	-	-	-	-	0.519
Subtotal: 8) VC831/2 - PRODUCTION ENGINEERING			*-*	*-*	*0.000*	*-*	*-*	*1.061*	*-*	*-*	*1.000*	*-*	*-*	*0.900*	*-*	*-*	*-*	*-*	*-*	*0.900*
9) VC851 - PRODUCT IMPROVEMENT																				
9.1) VC851 - PRODUCT IMPROVEMENT UTRE-N98/US FORACS-N96 (S05)	A		-	-	-	-	-	0.412	-	-	0.400	-	-	0.381	-	-	-	-	-	0.381
Subtotal: 9) VC851 - PRODUCT IMPROVEMENT			*-*	*-*	*0.000*	*-*	*-*	*0.412*	*-*	*-*	*0.400*	*-*	*-*	*0.381*	*-*	*-*	*-*	*-*	*-*	*0.381*
10) VC970 - INTEGRATED LOGISTICS SUPPORT																				
10.1) VC970 - INTEGRATED LOGISTICS SUPPORT (SHIPS)	A		-	-	-	-	-	0.202	-	-	0.180	-	-	0.150	-	-	-	-	-	0.150
Subtotal: 10) VC970 - INTEGRATED LOGISTICS SUPPORT			*-*	*-*	*0.000*	*-*	*-*	*0.202*	*-*	*-*	*0.180*	*-*	*-*	*0.150*	*-*	*-*	*-*	*-*	*-*	*0.150*
Total			-	-	0.000	-	-	22.995	-	-	29.168	-	-	15.599	-	-	-	-	-	15.599

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

Footnotes:

(4) PB17 Amended Footnote: Amended request provides $10.000M of additional funds to support approved increases for 56 additional High Speed Maneuverable Surface Targets (HSMST).

(5) 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 of which approximately 50 actually are destroyed. 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.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	**Date:** May 2017

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 / Explosive Ordnance Disposal Equip

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 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**To Complete**	**Total**
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	601.610	22.623	116.650	15.596	31.970	47.566	15.830	16.151	12.493	12.744	-	845.667
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	601.610	22.623	116.650	15.596	31.970	47.566	15.830	16.151	12.493	12.744	-	845.667
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**601.610**	**22.623**	**116.650**	**15.596**	**31.970**	**47.566**	**15.830**	**16.151**	**12.493**	**12.744**	**-**	**845.667**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	-	-	0.127	-	0.127	0.002	-	-	0.709	Continuing	Continuing
Flyaway Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
Explosive Ordnance Disposal (EOD) Equipment procures and manufactures Navy EOD required tools and equipment in support of both OCONUS and CONUS operations that allow the ability to detect, access, diagnose, render safe, exploit, and dispose threats to National Security. Current missions now require increased standoff distances and remote means to perform operational tasks due to the increased lethality of munitions and Weapons of Mass Destruction.

The Expeditionary Exploitation Unit (EXU-1) provides technical exploitation of IEDs and conventional ordnance to provide time sensitive, technical intelligence, tactical and operational information to EOD warfighters and National level intelligence activities. This program procures tools and equipment in support of their mission to collect, evaluate, analyze, and interpret foreign material acquisition and its relationship to the EOD community.

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. And, in support of JUONS CC-0558 Counter Unmanned Aerial System (C-UAS)Capabilities this program also supports the Navy effort to field reconfigured CREW dismounted systems with an initial, quick response, man-portable C-UAS capability.

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.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy | **Date:** May 2017

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 / Explosive Ordnance Disposal Equip

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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			- / 601.610	- / 22.623	- / 116.650	- / 15.596	- / 31.970	- / 47.566
P-40	**Total Gross/Weapon System Cost**				**- / 601.610**	**- / 22.623**	**- / 116.650**	**- / 15.596**	**- / 31.970**	**- / 47.566**

*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 2018 baseline funding will procure Navy EOD Equipment, Decision Support System (DSS) upgrades to Joint Service EOD Common Controller Platform, and DSS Production Environments, EOD Outfitting equipment, Advanced EOD Robotics Production Engineering, Acceptance, Test & Evaluation, Product Improvement of the EOD equipment; EOD training and related support; Technical Training material used for training at the Naval School Explosive Ordnance Disposal.

FY2018 funding is required to procure Mobile In-Country Exploitation (ICE), tools and equipment.

Additionally, FY 2018 baseline funds will procure Combined Explosive Exploitation Cell Platoon Laboratory Table of Allowance equipment for intelligence mission is to collect, evaluate, analyze, and interpret foreign material acquisition and its relationship to the EOD community(i.e. Advanced X-Ray; Weapons Assessment tools).

In FY 2018 this program also provides for the procurement of Counter Radio-Controlled Improvised Explosive Device (IED) Electronic Warfare (CREW) systems that disrupt enemy command and control radio frequency (RF) communications associated with IEDs. This includes the procurement of Joint CREW systems reconfigured to provide a Counter Unmanned Aerial System (C-UAS) capability in response to a Joint Urgent Operational Need (JUON), and includes initial systems supporting Naval Special Warfare C-UAS requirements.

This program also provides for the procurement of Naval Surface Warfare to provide a Counter Unmanned Aerial System (C-UAS) capability in response to a Joint Urgent Operational Need (JUOU).

OCO:
FY 2018 Overseas Contingency Operations (OCO) funds support Expeditionary Exploitation Unit One (formerly TSD) supports COCOM requirements in Operation Freedom Sentinal and Operation Inherent Resolve.

FY 2018 OCO funding supports recapitalization/reset of legacy Counter Radio-Controlled Improvised Explosive Device (IED) Electronic Warfare (CREW) systems/equipment currently in service, providing electronic warfare jammer protection against radio-controlled improvised explosive devices. CREW systems disrupt enemy command and control radio frequency (RF) communications associated with IEDs. Systems are adaptively deployed across Naval Expeditionary Combat Command (NECC) and Naval Beach Group forces as required for Operation Freedom's Sentinel (OFS).

Exhibit P-5, Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	**P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip	**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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	601.610	22.623	116.650	15.596	31.970	47.566
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	601.610	22.623	116.650	15.596	31.970	47.566
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**601.610**	**22.623**	**116.650**	**15.596**	**31.970**	**47.566**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	0.127	-	0.127
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) ADVANCED EOD ROBOT[†] [1]	-	-	-	222,222.00	18	4.000	220,555.55	27	5.955	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	-	-	-	4.000	-	-	5.955	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - VN075 - EOD EQUIPMENT/ SYSTEM Cost	**-**	**-**	**-**	**-**	**-**	**4.000**	**-**	**-**	**5.955**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware - VN077 - EOD OUTFITTING Cost																		
Recurring Cost																		
2.1.1) Expeditionary Exploitation Unit One (EXU-1) [2]	-	-	12.721	-	-	1.600	-	-	1.000	-	-	0.600	-	-	7.570	-	-	8.170
2.1.2) MATERIAL FOR NAVSCOLEOD [3]	-	-	2.803	-	-	0.340	-	-	0.350	-	-	0.350	-	-	-	-	-	0.350
2.1.3) EOD DSS CIP [4]	-	-	8.904	-	-	1.150	-	-	1.011	-	-	1.233	-	-	-	-	-	1.233
2.1.4) NAVY EOD EQUIPMENT	-	-	30.982	-	-	7.839	-	-	0.067	-	-	-	-	-	-	-	-	-
2.1.5) JS EOD MOBILE ICE MODULES [5]	-	-	1.756	-	-	0.271	-	-	0.200	-	-	0.200	-	-	-	-	-	0.200
Subtotal: Recurring Cost	-	-	57.166	-	-	11.200	-	-	2.628	-	-	2.383	-	-	7.570	-	-	9.953

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Exhibit P-5, Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	**P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip	**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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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	-	-	*57.166*	-	-	*11.200*	-	-	*2.628*	-	-	*2.383*	-	-	*7.570*	-	-	*9.953*
Hardware - VN870 - JOINT CREW Cost																		
Non Recurring Cost																		
3.1.1) JOINT CREW(†) (6)	-	-	3.536	117,160.00	25	2.929	160,780.00	652	104.829	-	-	0.000	325,338.00	75	24.400	325,338.00	75	24.400
3.1.2) TECH INSERTION and REFRESH	-	-	0.001	-	-	-	-	-	0.774	-	-	0.812	-	-	-	-	-	0.812
3.1.3) JOINT CREW UNMANNED AERIAL SYSTEMS (7)	-	-	-	-	-	-	-	-	-	-	-	8.250	-	-	-	-	-	8.250
3.1.4) NSW COUNTER UNMANNED AERIAL SYSTEM (8)	-	-	-	-	-	-	-	-	-	-	-	1.600	-	-	-	-	-	1.600
Subtotal: Non Recurring Cost	-	-	3.537	-	-	2.929	-	-	105.603	-	-	10.662	-	-	24.400	-	-	35.062
Subtotal: Hardware - VN870 - JOINT CREW Cost	-	-	*3.537*	-	-	*2.929*	-	-	*105.603*	-	-	*10.662*	-	-	*24.400*	-	-	*35.062*
Support - VN830 - PRODUCTION ENGINEERING Cost																		
4.1) PRODUCTION ENGINEERING (9)	-	-	8.481	-	-	2.844	-	-	1.100	-	-	1.045	-	-	-	-	-	1.045
Subtotal: Support - VN830 - PRODUCTION ENGINEERING Cost	-	-	*8.481*	-	-	*2.844*	-	-	*1.100*	-	-	*1.045*	-	-	-	-	-	*1.045*
Support - VN850 - PRODUCT IMPROVEMENT Cost																		
5.1) PRODUCT IMPROVEMENT (10)	-	-	7.294	-	-	0.542	-	-	0.577	-	-	0.574	-	-	-	-	-	0.574
Subtotal: Support - VN850 - PRODUCT IMPROVEMENT Cost	-	-	*7.294*	-	-	*0.542*	-	-	*0.577*	-	-	*0.574*	-	-	-	-	-	*0.574*
Support - VN860 - ACCEPTANCE, TEST & EVALUATION Cost																		
6.1) ACCEPTANCE, TEST & EVALUATION (11)	-	-	6.984	-	-	0.810	-	-	0.587	-	-	0.645	-	-	-	-	-	0.645
6.2) JOINT CREW ACCEPTANCE TEST & EVALUATION	-	-	3.104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: FY 2018 Navy																	Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6						P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip											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.

	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Cost Elements	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: Support - VN860 - ACCEPTANCE, TEST & EVALUATION Cost	-	-	*10.088*	-	-	*0.810*	-	-	*0.587*	-	-	*0.645*	-	-	-	-	-	*0.645*
Support - VNTNG - INITIAL TRAINING Cost																		
7.1) VNTNG - INITIAL TRAINING (12)	-	-	2.712	-	-	0.298	-	-	0.200	-	-	0.287	-	-	-	-	-	0.287
Subtotal: Support - VNTNG - INITIAL TRAINING Cost	-	-	*2.712*	-	-	*0.298*	-	-	*0.200*	-	-	*0.287*	-	-	-	-	-	*0.287*
Support - PRIOR YEARS CUMULATIVE FUNDING Cost																		
8.1) PRIOR YEAR FUNDING	-	-	512.332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - PRIOR YEARS CUMULATIVE FUNDING Cost	-	-	*512.332*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	601.610	-	-	22.623	-	-	116.650	-	-	15.596	-	-	31.970	-	-	47.566

(†) indicates the presence of a P-5a

Footnotes:

(1) Advanced EOD Robotics Family of System 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.

(2) COMBINED EXPLOSIVE EXPLOITATION CELL-CEXC/NSWCIHEOD Expeditionary Exploitation Unit (EXU1): Provides for the outfitting of EXU-1 Detachment approved Table of Allowance to address operational requirements for IED exploitation support of global tasking.

(3) MATERIAL FOR NAVSCOLEOD: Provides for inert ordnance material to NAVSCOLEOD in support of Joint Service training.

(4) EOD DECISION SUPPORT SYSTEM (DSS) CIP: Procurement of Joint EOD Decision Support System continuous improvement for major modifications to include the Joint EOD Common Controller Platform and Joint EOD Portal for access to relevant and timely information to extend military capability.

(5) JS EOD MOBILE ICE MODULES: Provides self contained, deployable MILVAN type container configured and outfitted to perform ordnance and IED exploitation.

(6) 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.

(7) JOINT CREW UNMANNED AERIAL SYSTEMS: Procurement of Joint CREW systems to provide a Counter Unmanned Aerial System (C-UAS) capability in support of a Joint Urgent Operational Need (JUON).

(8) 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 (JUOU).

(9) PRODUCTION ENGINEERING Provides production engineering support for all EOD production contracts. Reviews all technical data packages prior to procurement and provide procurement instruction to the procuring activity in support of the EOD unified procurement system.

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Exhibit P-5, Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip	Item Number / Title [DODIC]: 1 / EOD - CREW Equipment
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

(10) PRODUCT IMPROVEMENT Engineering services to improve EOD Systems/Equipment in production to improve maintainability, utilize current technology and decrease cost.

(11) ACCEPTANCE, TEST & EVALUATION Test, inspect, accept first articles and, on a 100% basis, the production quantity of EOD tools and equipment being procured.

(12) INITIAL TRAINING Provides training on EOD systems and related support.

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Exhibit P-5a, Procurement History and Planning: FY 2018 Navy									**Date:** May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6			**P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip						**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment		
Cost Elements	**O C O**	**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) ADVANCED EOD ROBOT		2016	NORTHROP GRUMMAN / Herndon, VA	C / FFP	NSWCIHEOD	Mar 2016	Mar 2017	18	222,222.00	N		Jun 2014
1.1.1) ADVANCED EOD ROBOT		2017	NORTHROP GRUMMAN / Herndon, VA	C / FFP	NSWCIHEOD	Aug 2017	Aug 2018	27	220,555.55	N		Jan 2017
3.1.1) JOINT CREW[†]		2016	NGC / San Diego, CA	C / FPIF	NAVSEA	Jul 2016	Mar 2017	25	117,160.00	Y		Oct 2014
3.1.1) JOINT CREW[†]	✓	2017	TBD / UNKNOWN	C / FFP	NAVSEA	Aug 2017	Dec 2018	652	160,780.00	Y		Aug 2016
3.1.1) JOINT CREW[†]	✓	2018	TBD / UNKNOWN	C / FFP	NAVSEA	Jan 2018	Apr 2019	75	325,338.00	Y		Aug 2016

[†] indicates the presence of a P-21

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Exhibit P-21, Production Schedule: FY 2018 Navy | **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6 | **P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip | **Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

O C O	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	BALANCE
												Fiscal Year 2016 / Calendar Year 2016								Fiscal Year 2017 / Calendar Year 2017												
			3.1.1) JOINT CREW [6]																													
	1	2016	NAVY	25	0	25										A -	-	-	-	-	-	-	-	25							0
✓	2	2017	NAVY	652	0	652																							A -	-	652
✓	2	2018	NAVY	75	0	75																									75

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Exhibit P-21, Production Schedule: FY 2018 Navy		**Date:** May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	**P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip	**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

			Cost Elements (Units in Each)				Fiscal Year 2018 — Calendar Year 2018												Fiscal Year 2019 — Calendar Year 2019												BALANCE
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 [6]																															
	1	2016	NAVY	25	25	0																									0
✓	2	2017	NAVY	652	0	652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	82	82	82	82	82	80	80			0
✓	2	2018	NAVY	75	0	75	A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	15

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Exhibit P-21, Production Schedule: FY 2018 Navy	**Date:** May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	**P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip	**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

O C O	M F R #	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	BALANCE
				Cost Elements (Units in Each)								Fiscal Year 2020 / Calendar Year 2020											Fiscal Year 2021 / Calendar Year 2021									
3.1.1) JOINT CREW [6]																															
	1	2016	NAVY	25	25	0																									0
✓	2	2017	NAVY	652	652	0																									0
✓	2	2018	NAVY	75	60	15	8	7																							0

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Exhibit P-21, Production Schedule: FY 2018 Navy												**Date:** May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6			**P-1 Line Item Number / Title:** 5509 / Explosive Ordnance Disposal Equip									**Item Number / Title [DODIC]:** 1 / EOD - CREW Equipment

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2018	1-8-5 For 2018	MAX For 2018	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	NGC - San Diego, CA	TBD	TBD	TBD	0	0	0	0	0	0	0	0
2	TBD - UNKNOWN	TBD	TBD	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).

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	65.447	9.906	6.243	5.981	0.000	5.981	5.559	5.659	5.913	6.032	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	65.447	9.906	6.243	5.981	0.000	5.981	5.559	5.659	5.913	6.032	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**65.447**	**9.906**	**6.243**	**5.981**	**0.000**	**5.981**	**5.559**	**5.659**	**5.913**	**6.032**	**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:

[P40A / 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 insure that only safe, quality, reliable, and ready Navy and Marine Corps weapons systems and ordnance items are provided to the Fleet. The results 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.

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 equipments 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.

[P40A / RA005 - FLEET MINE SUPPORT EQUIPMENT]: Mine Countermeasure Targets are used to emulate both physically and electronically Foreign mine threats for Fleet training, exercises, ranges, and platform and system validation. Instrumented Mine Countermeasures (MCM) Targets can be programmed to behave and function like real foreign mine threats for mine sweeping and platform validation where non-instrumented Mine Countermeasure Targets emulate foreign threats physically for mine hunting training and system validation. Non-instrumented MCM Targets are also used for mine neutralization training and validation.

[P40A / RA001 - FLT SUPPORT ORDALT PROCUREMENT (MK92)]: Provides hardware and related materials to modify Fire Control System MK92 Mod 2/6 installed onboard FFG 7 Class ships. Modifications correct safety, environmental, Reliability, Maintainability and Availability (RM&A), cost of ownership and obsolescence deficiencies to maintain the readiness of the Anti-Aircraft Warfare/Anti-Surface Warfare (AAW/ASUW) Weapons System mission for self and area defense against hostile air and surface threats, including anti-ship missile threats. Hardware is procured as Ordnance Alterations (ORDALTs). Installation of ORDALTs will be accomplished by either AIT (Alteration Installation Teams) or in conjunction with routine repair actions planned in the fiscal years following the procurement.

[P40A / RA4M6 - FMP INSTALLATION]: Provides funding to install procured MK92 ORDALTs into FFG 7 Class ships by AIT.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	**Date:** May 2017

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		

[P40A / RA006 - GRIFFIN MISSILE SYSTEM (GMS)]: The Griffin Missile System (GMS) will provide precision, short range, anti-surface warfare attack capability against Fast Inshore Attack Craft (FIAC) targets. The GMS provides these capabilities through the use of Griffin Missile (procured separately with WPN funding) and GMS ship set integrated on a Patrol Coastal (PC). A GMS ship set consists of the following components: Electro-Optical Infra-Red sensor with laser designator, two Launchers and associated equipment, Weapons Control System including cabling, connectors, graphical user interface, and Operator Interface Station. System Install & Check-Out is included.

[P40A / RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH]: This line supports major initial replacement systems for the Griffin Missile (GMS) Program to include Electro-Optical Infra-Red sensor with laser designator, battle 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), installation and testing of all software and shipboard training.

[P40A / RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH]: This line continues funding for Griffin Missile System under a new grouping, Patrol Combatants. This is a technical adjustment to move non-frigate funding out of the Frigate Missile funding group. 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.

[P40A / RA003 - INDUSTRIAL FACILITIES]: Provides funding for capital type rehabilitation projects at two (2) government-owned, contractor- operated (GOCO) plants for weapon systems. Federal Acquisition Regulation Part 52.245-7 specifies facilities use contracts require government funding of capital type rehabilitation projects to support and maintain these facilities. These plants have an average age of 45 years and lack of proper maintenance will severely limit capabilities to maintain scheduled production rates and overall productivity. Estimates support environmental, safety, energy conservation, and major repair at the GOCO facilities.

Justification:
Increase of $0.500M in FY18 to cost element 5, TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER, Ordnance Support Equipment, Industrial Facilities (RA003) will address critical upgrades to environmental units that support the operation of energetics production lines and mitigate safety and health concerns at Naval Industrial Reserve Ordnance Plant (NIROP), Allegany Ballistics Laboratory (ABL), Rocket Center, WV.

FY 2017 decrease in Items Less Than $5 Million OPN by $0.262M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	Date: May 2017

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	417.158	0.000	48.020	74.550	0.000	74.550	66.708	76.169	70.674	81.220	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	417.158	0.000	48.020	74.550	0.000	74.550	66.708	76.169	70.674	81.220	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**417.158**	**0.000**	**48.020**	**74.550**	**0.000**	**74.550**	**66.708**	**76.169**	**70.674**	**81.220**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	0.112	0.367	0.769	-	0.769	0.892	1.099	0.893	0.412	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. The funds support Hull, Mechanical, and Electrical (HM&E) and Combat Systems training requirements, training upgrades and engineering sustainment for the Submarine Weapon Systems. 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).

FY18 increases in funding and requirements for the Submarine Multi-Mission Team Trainer (SMMTT) procurement / modernization was based on Fleet availabilities and Trainer alignment to increase support for VA Class Modernization, SSBN/SSGN Switchable SMMTT and Sensor Modernization tasks that were not previously funded.

Line item 5661 was 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 modify/upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment and to implement Training Enhancement Changes (TECs) to the trainer systems capabilities.

[P40A / HM&E TRAINERS]: This line procures HM&E Fleet and Team Trainer Technical Training Equipment (TTE), Training Unique Equipment (TUE) and Training Enhancement Changes (TECs), which are centrally managed systems, support equipment and various modifications and upgrades to simulators / stimulators, such as: Submarine Ship Control Operator Trainer (SCOT) and Firefighter Trainer (FFT). These modifications and upgrades were identified by the Submarine Learning Center (SLC) and approved by Chief of Naval Operations (CNO) for use at the submarine training activities. Technical Training Equipment/Training Unique Equipment sustains high fidelity training and replaces equipment beyond economical repair or procures new equipment. Funds also procure Submarine High Risk Trainer procurement for Pressurized Submarine Escape Trainers and Damage Control Wet Trainers.

[P40A / ENGINEERING TRAINERS]: This line procures and installs Fleet Interactive Display Equipment (FIDE) trainers, Training Enhancement Changes (TECs) and other Navy Engineering Training devices as identified by the Submarine Learning Center (SLC) and approved by the Chief of Naval Operations (CNO) for use at the submarine training activities. FIDEs support multiple ship classes and configurations at nine different geographic sites, each requiring different levels of installation work. Therefore, the cost for the program varies widely from year to year depending on the combination of these factors.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
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		

[P40A / NAVIGATION TRAINING]: This line procures Submarine Fleet and Team Navigation trainer sustaining 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. A Single Story Bridge Trainer will be procured for Homeports where an SBT Dome MILCON cannot be accommodated. This line also provides configuration changes for the Voyage Management Systems (VMS), ECDIS-N, and the Submarine Multi Reconfigurable Training System (MRTS). The MRTS family includes VA CLASS Torpedo Room, Emergency Diesel Generator, Weapons Launch Console Team Trainer, and Submarine Communications Support System / Common Submarine Radio Room (SCSS / CSRR) trainers. The SBT/ISPAN is comprised of Virtual Tactical, Weapons, Mission Payload and Sonar Simulation Control, Beam Forming Sonar Simulation Trainer, VMS, ECDIS-N, Radar Simulation, Navigation Aids, Periscope Simulation (PSIM), and Harbor Databases.

These systems and Training Enhancement Changes (TECs) are identified by the Submarine Learning Center (SLC) and approved by Chief of Naval Operations (CNO), for use at the submarine training activities. These systems support fleet requested updates and technical refresh of all the systems and products listed above.

[P40A / COMBAT CONTROL ACOUSTIC TRAINERS]: This line procures SUBMARINE COMMON OPERATIONAL ANALYSIS AND EMPLOYMENT TRAINER (COAET) fundamental and employment skill level as well as Sonar Employment Trainer (SET) acoustic operator employment skill and team training fleet requirements.

SUBMARINE COMMON OPERATIONAL ANALYSIS AND EMPLOYMENT TRAINERS
The COAET is an interactive, fundamental skills-level and employment skills trainer. The purpose of these devices is to provide operator and introductory team training to submarine force personnel prior to entry into the Submarine Multi Mission Team Trainer (SMMTT). It also provides supplemental training to off-load the heavily utilized attack center trainers. COAET provides training utilizing partial tactical builds and emulations of the latest Sonar, Combat Control, Imaging and Electronic Warfare Systems. These devices 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. Also provides funding for TECs, Virtualized Tactical Control (VTAC), Beam Simulation for Sonar Trainers (BSST),Periscope Simulation (PSIM), SUBSKILLSNET, Weapons Control, Mission Payload Control, Advanced Processing Build (APB)/ Technical Insertion (TI),and Sonar Tactical Decision Aid (STDA) implementation.

SUBMARINE SONAR TRAINERS
The Sonar Employment Trainer (SET) provides acoustic operator employment Fleet and team training for submarine sonar systems. It uses entirely commercial components to contain contact and environment models, simulations of the sensors and signal processing, simulated operator consoles, and an instructional subsystem including an instructor's console. 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 SET is an essential component of an emerging shore based training that supports the projected technology in the Fleet systems that are designed to meet current and future acoustic threats. The SET is part of the solution to increase operator competence and data recognition through employment training by its use of 3-D graphics, animation, audio and scientific visualization methods to illustrate highly complex displays and concepts of oceanographic physics. The demands of curriculum and student participation at NAVSUBSCOL, Groton dictates the number and configuration of trainers provided. This trainer supports real world recorded sensors for playback in the trainer.

FY2017: Procures one kit and implements simulation upgrades to the SET as directed by the Type Commander.

[P40A / ATTACK CENTER TRAINERS]: SUBMARINE MULTI MISSION TEAM TRAINER (SMMTT) procures highly sophisticated 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 desired submarine force readiness levels. Also, funding is included for TECs.

The Combat Control System (CCS) AN/BYG-1 is installed on SSN/SSBN/SSGN Class submarines and is planned for future modernizations of software and hardware to provide enhanced warfighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) AN/BQQ-10 upgrades are being installed with future revisions which provides enhanced warfighter capabilities. These CCS and ARCI upgrades to the AN/BYG1 and BQQ-10 systems in the fleet drive the modernization of the Shore Based Team Trainers. SMMTT also includes annual Tactical Imaging/ Advanced Processor Build (TI/APB) upgrades that support multiple classes of submarines. The Submarine Multi-Mission Team Trainer (SMMTT) supports operator, employment, strike, and Battle Group training for enlisted and officer pipelines for these systems. The SMMTT provides operators and combat teams the opportunity to train ashore prior to and between deployments. The shore based training provides a means of maintaining team proficiency

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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		

prior to ship deployment. SMMTT is also used for SSN/SSGN crew certification. The use of Open Architecture (OA) trainer systems allows for the continuous growth of functional flexibility ultimately leading to employment training conducted for any submarine combat system.   Plans are established to likewise upgrade submarine tactical systems to an OA, and the trainers will be compatible with the tactical interfaces. This program includes modifications to the functionality of the Periscope Simulator (PSIM) to provide common imaging training for CCS trainers and includes Electronic Surveillance Simulation Software. Recent and tactical CCS change the interfaces for the software updates to the navigation submarine trainers. This trainer supports real world recorded sensors for playback in the trainer.

Three Legacy SMMTT trainers support the SSBN Crew Certification and pre-deployment training as required by the Type Commander. One LSMMTT trainer supports SSNs that have not been modernized in the TI/APB process including SSN 774 class submarines. LSMMTT is a combination of tactical combat controls and sonar systems driven by simulation/stimulation devices and leverages additional trainer simulation/auxiliary ship systems.

FY2017: Procures 3 Phase III Modifications (MOD) for SSN and 3 SSN/SSBN MODS for Strategic Forces.

FY2018-FY2022: Procures one SMMTT MOD per year. This is to support additional SSBN Engineering Production Model (EPM) and TI/APB due to additional Trainer Enhancement requirements directed by the TYCOM. The requirements include but are not limited to Low Cost Conformal Array (LCCA) updates, All World Environment Simulator (AWESIM) technical refreshes and Periscope Simulators (PSIM) updates. Also included are the Uninterrupted Power Supply (UPS) procurements, system procurements of Touchscreens, system procurements of Touchscreen displays across various sites and updates to the Torpedo Relevancy Model (TRM). FY2018 procures SSBN/SSGN Dual capability in SMMTTs at both TTFs.

[P40A / SSBN SMMTT STRATEGIC FORCES]: FY2017, funding procured a complete new SSBN trainer. FY 2018 funding represents annual sustainment procurement for hardware upgrades, software support for SSBN trainers, and additional Trainer Enhancement requirements directed by the Type Commander (TYCOM).

[P40A / SMMTT SSN TAILORED 2/4 MODEL]: In FY2020 and FY2021 the SMMTT Program procures a new SMMTT trainer in both Norfolk and San Diego due to Tailored 2/4 model. Norfolk requires extensive site preparation in FY2021. Site Preparation for SMMTT location at site, full sonar/combat control/simulation/stimulation kits, consoles and auxiliary displays, Interior Communication Network (ICN), Uninterrupted Power Supply (UPS), Heating, Ventilation and Air Conditioning (HVAC) units.

[P40A / SMMTT VA Class New Normal]: FY2018 procures an EPM and 3 Virginia (VA) Class Submarine SMMTT providing sustainment funding for modernization of 4 VA Class SMMTTs to support VA Class Modernization. This procurement updates trainer to the current TI/APB for tactical and simulation subsystems.

[P40A / SENSOR SIMULATION]: Update the simulation infrastructure and integrate tactical components of the BLQ-10. Conduct systems engineering requirements analysis and design, code and unit testing and integration and test of trainer components. Perform trainer hardware engineering for first article and subsequent production level TIs. Delivered with trainer installation or updates as applicable.

Updates and modernization the SMMTT Sonar Sensors (WQS-9 and LCCA) to the current TI/APB. Capability that provides Acoustic superiority with WQS-9 and LCCA sensor support in the SMMTT delivered with trainer installation or updates as applicable.

[P3A / SMMTT PH III MODS]: FY2018/2021/2022 are hardware procurements. FY2019 procures software kits which are less expensive than the hardware kits in the aforementioned years. FY2020 are hardware procurements with the All World Environmental Simulator (AWESIM) capability added. FY2020 costs are higher than FY2019 due to the existing 2/4 tailored model SMMTT Phase 3.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	Date: May 2017

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

					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibits Schedule										
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				- / 295.885	- / -	- / 37.657	- / 55.036	- / -	- / 55.036
P-3a	1 / SMMTT PH III MODS (TBD)				- / 121.273	- / 0.000	- / 10.363	- / 19.514	- / 0.000	- / 19.514
P-40	**Total Gross/Weapon System Cost**				**- / 417.158**	**- / 0.000**	**- / 48.020**	**- / 74.550**	**- / 0.000**	**- / 74.550**

*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: The items contained within this budget line were funded in other lines in FY2016 (BLI 5662) and prior years.

SMMTT PH III MODS
The increase in costs is due to additional Trainer Enhancement requirements directed by the TYCOM. The requirements include, but are not limited to Low Cost Conformal Array (LCCA) updates, All World Environmental Simulator (AWESIM) tech refresh, and Periscope Simulators (PSIM). Also included are the Uninterrupted Power Supply American Power Conversion (UPS/APC) procurements, system procurements of Touchscreens displays across various sites, and updates to the Torpedo Relevancy Model (TRM). These adjustments will increase overall system capability.

This line provides funds to modify/upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment and to implement Trainer Enhancement Changes (TECs) to the trainer systems capabilities.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) HM&E TRAINERS																				
1.1) FIREFIGHTER TRAINER (1)	A		-	-	-	-	-	-	3,900K	2	7.800	3,834K	1	3.834	-	-	-	3,834K	1	3.834
1.2) SUSTAINING TTE	A		-	-	36.409	-	-	-	-	-	0.424	-	-	0.410	-	-	-	-	-	0.410
1.3) SUBMARINE TRAINING DEVICE MODS	A		-	-	12.871	-	-	-	-	-	1.163	-	-	1.184	-	-	-	-	-	1.184
1.4) SCOT MODS	A		-	-	6.307	-	-	-	-	-	1.169	-	-	1.190	-	-	-	-	-	1.190
1.5) VSCOT MODS	A		-	-	5.483	-	-	-	-	-	0.908	-	-	0.924	-	-	-	-	-	0.924
Subtotal: 1) HM&E TRAINERS			**-**	**-**	**61.070**	**-**	**-**	**-**	**-**	**-**	**11.464**	**-**	**-**	**7.542**	**-**	**-**	**-**	**-**	**-**	**7.542**
2) ENGINEERING TRAINERS																				
2.1) CVN FIDE (2)	A		-	-	14.997	-	-	-	-	-	3.006	-	-	3.056	-	-	-	-	-	3.056
2.2) SUBMARINE FIDE	A		-	-	26.436	-	-	-	-	-	1.600	-	-	1.624	-	-	-	-	-	1.624
Subtotal: 2) ENGINEERING TRAINERS			**-**	**-**	**41.433**	**-**	**-**	**-**	**-**	**-**	**4.606**	**-**	**-**	**4.680**	**-**	**-**	**-**	**-**	**-**	**4.680**
3) NAVIGATION TRAINING																				
3.1) SBT/ISPAN	A		-	-	18.109	-	-	-	-	-	3.207	-	-	3.278	-	-	-	-	-	3.278
3.4) MINOR TRAINING SUPPORT EQUIPMENT	A		-	-	4.379	-	-	-	-	-	0.213	-	-	0.211	-	-	-	-	-	0.211
3.5) NAVIGATION TRAINER UPDATES	A		-	-	13.317	-	-	-	-	-	0.075	-	-	0.076	-	-	-	-	-	0.076
Subtotal: 3) NAVIGATION TRAINING			**-**	**-**	**35.805**	**-**	**-**	**-**	**-**	**-**	**3.495**	**-**	**-**	**3.565**	**-**	**-**	**-**	**-**	**-**	**3.565**
4) COMBAT CONTROL ACOUSTIC TRAINERS																				
4.1) SET	A		-	-	9.557	-	-	-	1,287K	1	1.287	1,306K	1	1.306	-	-	-	1,306K	1	1.306
4.3) COAET MODIFICATIONS (3)	A		792,166.67	48	38.024	-	-	-	1,083K	4	4.332	1,102K	4	4.410	-	-	-	1,102K	4	4.410
Subtotal: 4) COMBAT CONTROL ACOUSTIC TRAINERS			**-**	**-**	**47.581**	**-**	**-**	**-**	**-**	**-**	**5.619**	**-**	**-**	**5.716**	**-**	**-**	**-**	**-**	**-**	**5.716**
5) ATTACK CENTER TRAINERS																				
5.1) SSBN SMMTT STRATEGIC FORCES	A		-	-	-	-	-	-	7,995K	1	7.995	-	-	4.102	-	-	-	-	-	4.102
5.3) SMMTT SSN - EPM (4)	A		2,181K	13	28.352	-	-	-	2,153K	1	2.153	3,352K	1	3.352	-	-	-	3,352K	1	3.352
5.4) SMMTT VA Class New Normal	A		-	-	-	-	-	-	-	-	-	4,060K	3	12.180	-	-	-	4,060K	3	12.180
5.5) SMMTT VA CLASS EPM MODS	A		3,127K	5	15.633	-	-	-	-	-	-	-	-	4.060	-	-	-	-	-	4.060

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																		**Date:** May 2017		
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		

			Prior Years			**FY 2016**			**FY 2017**			**FY 2018 Base**			**FY 2018 OCO**			**FY 2018 Total**		
Item Number / Title [DODIC]	**ID CD**	**MDAP/ MAIS Code**	**Unit Cost ($)**	**Qty (Each)**	**Total Cost ($ M)**	**Unit Cost ($)**	**Qty (Each)**	**Total Cost ($ M)**	**Unit Cost ($)**	**Qty (Each)**	**Total Cost ($ M)**	**Unit Cost ($)**	**Qty (Each)**	**Total Cost ($ M)**	**Unit Cost ($)**	**Qty (Each)**	**Total Cost ($ M)**	**Unit Cost ($)**	**Qty (Each)**	**Total Cost ($ M)**
5.6) SMMTT MODS SSGN KITS [5]	A		-	-	-	-	-	-	-	-	-	-	-	2.100	-	-	-	-	-	2.100
5.7) SMMTT TECH SUPPORT [6]	A		-	-	35.616	-	-	-	-	-	2.325	-	-	4.303	-	-	-	-	-	4.303
5.8) SENSOR SIMULATION	A		-	-	-	-	-	-	-	-	-	-	-	3.436	-	-	-	-	-	3.436
5.9) MODIFICATIONS	A		-	-	30.395	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) ATTACK CENTER TRAINERS			**-**	**-**	**109.996**	**-**	**-**	**-**	**-**	**-**	**12.473**	**-**	**-**	**33.533**	**-**	**-**	**-**	**-**	**-**	**33.533**
Total			**-**	**-**	**295.885**	**-**	**-**	**-**	**-**	**-**	**37.657**	**-**	**-**	**55.036**	**-**	**-**	**-**	**-**	**-**	**55.036**

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

Footnotes:

[1] TYCOM approved the requirement and funding to replace all existing Firefighter Trainers with a new Firefighter Trainer that meets the rigors of the USS MIAMI Flag Panel Fire Review. The Next Generation Firefighter Trainer is the replacement trainer for all seven submarine sites. Funds will procure the Next Generation Firefighting Trainers that will permit high temperature environments and multi-level firefighting scenarios for Submarine Crews to rehearse basic and team firefighting proficiency. This trainer will replace the brick and mortar low temperature firefighting trainers that have reached end of service life.

[2] Cost increase above inflation due to additional maintenance support and equipment required to enable FIDE operation in FY19 and beyond.

[3] Cost growth in excess of inflation in FY 18 to support additional equipment procured to include High Frequency Active Sensors in COAET.

[4] Attack Center Trainer EPM increased in unit costs in FY2017 to FY2018 due to the increased requirements for Submarine Warfare Federated Tactical equipment and capabilities as directed by the TYCOM. The additional requirements include, but are not limited to the addition of Low Cost Conformal Array (LCCA) updates, All World Environmental Simulator (AWESIM) technical refresh, Periscope Simulators (PSIM) updates, replacement of Uninterrupted Power Supply (UPS) equipment, Touchscreens displays, and updates to the Torpedo Relevancy Model (TRM).

[5] FY 2018 procures Engineering Development Modification software for SSGN SMMTT.

[6] Attack Center Technical Support costs increased from FY2017 to FY2018 due to supporting multiple modernized SMMTT Builds, including 688i, SSGN, SSBN and VA Modernization.   The additional Technical support includes but is not limited to sensor updates and integration, Trainer Equipment Change Requests (TECR), All World Environmental Simulator (AWESIM) technical refresh, Periscope Simulators (PSIM) updates, replacement of Uninterrupted Power Supply equipment, Touchscreens displays, and updates to the Torpedo Relevancy Model (TRM).

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Exhibit P-3a, Individual Modification: FY 2018 Navy				**Date:** May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7		**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods		**Modification Number / Title:** 1 / SMMTT PH III MODS		
ID Code (A=Service Ready, B=Not Service Ready) :			**MDAP/MAIS Code:**			

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	121.273	0.000	10.363	19.514	0.000	19.514
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	121.273	0.000	10.363	19.514	0.000	19.514
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**121.273**	**0.000**	**10.363**	**19.514**	**0.000**	**19.514**
(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:

SMMTT upgrades to hardware and simulation to match current Fleet configurations.

[SMMTT PHIII MODS] SMMTT upgrades to hardware and simulation to match current Fleet configurations. FY2017, FY2018, FY2021, and FY2022 are hardware procurements.

Unit costs are significantly higher in FY2018 due to additional Trainer Enhancement requirements directed by the TYCOM. The requirements include, but are not limited to Low Cost Conformal Array (LCCA) updates, All World
Environmental Simulator (AWESIM) tech refresh, and Periscope Simulators (PSIM). Also included are the Uninterrupted Power Supply (UPS) procurements, system procurements of Touchscreens
 displays across various sites, and updates to the Torpedo Relevancy Model (TRM).

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Exhibit P-3a, Individual Modification: FY 2018 Navy				**Date:** May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7		**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods		**Modification Number / Title:** 1 / SMMTT PH III MODS	
ID Code (A=Service Ready, B=Not Service Ready) :			**MDAP/MAIS Code:**		
Models of Systems Affected: SMMTT PH III MODIFICATIONS		**Modification Type:** TBD		**Related RDT&E PEs:**	

Financial Plan	Prior Years Qty (Each) / Total Cost ($ M)	FY 2016 Qty (Each) / Total Cost ($ M)	FY 2017 Qty (Each) / Total Cost ($ M)	FY 2018 Base Qty (Each) / Total Cost ($ M)	FY 2018 OCO Qty (Each) / Total Cost ($ M)	FY 2018 Total Qty (Each) / Total Cost ($ M)
Procurement						
Modification Item 1 of 1: SMMTT PH III MODS						
B Kits						
Recurring						
1.1.1) SMMTT PHIII MODS - NonOrganic [7]	36 / 117.701	- / -	3 / 9.623	3 / 18.775	- / -	3 / 18.775
Subtotal: Recurring	- / 117.701	- / -	- / 9.623	- / 18.775	- / -	- / 18.775
Subtotal: SMMTT PH III MODS	36 / 117.701	- / -	3 / 9.623	3 / 18.775	- / -	3 / 18.775
Subtotal: Procurement, All Modification Items	- / 117.701	- / -	- / 9.623	- / 18.775	- / -	- / 18.775
Installation						
Modification Item 1 of 1: SMMTT PH III MODS	- / 3.572	- / 0.000	- / 0.740	- / 0.739	- / 0.000	- / 0.739
Subtotal: Installation	- / 3.572	- / -	- / 0.740	- / 0.739	- / -	- / 0.739
Total						
Total Cost (Procurement + Support + Installation)	121.273	0.000	10.363	19.514	0.000	19.514

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Exhibit P-3a, Individual Modification: FY 2018 Navy	**Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	**P-1 Line Item Number / Title:** 5661 / Submarine Training Device Mods	**Modification Number / Title:** 1 / SMMTT PH III MODS

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

Modification Item 1 of 1: SMMTT PH III MODS

Manufacturer Information

Manufacturer Name: NSWC CD/NUWC NPT [8]	Manufacturer Location: BETHESDA, MD/ NEWPORT, RI
Administrative Leadtime *(in Months)*: 6	Production Leadtime *(in Months)*: 17

Dates	FY 2016	FY 2017	FY 2018
Contract Dates		Jan 2017	Jan 2018
Delivery Dates		May 2018	May 2019

Installation Information

Method of Implementation: AIT:: Installation Name: SMMTT PHIII MODS

Installation Cost	**Prior Years** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Prior Years	30 / 3.572	3 / 0.000	1 / 0.740	2 / 0.369	0 / 0.000	2 / 0.369
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	2 / 0.370	0 / 0.000	2 / 0.370
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	30 / 3.572	3 / 0.000	1 / 0.740	4 / 0.739	0 / 0.000	4 / 0.739

Installation Schedule

	PYS	FY 2016 Q1	Q2	Q3	Q4	FY 2017 Q1	Q2	Q3	Q4	FY 2018 Q1	Q2	Q3	Q4
In	30	-	-	-	3	-	-	-	1	-	-	-	4
Out	30	-	-	-	3	-	-	-	1	-	-	-	4

Footnotes:

[7] Production lead time is 17 months. FY2018 & FY2019 installation unit cost increase for 2 SSBN kits (1 per fiscal year) due to receiving additional Trainer Enhancement requirements directed by the TYCOM. These kits will require a rip out of the obsolete existing equipment and modifications to support higher-fidelity equipment but are not limited to Low Cost Conformal Array (LCCA) updates, All World Environmental Simulator (AWESIM) tech refresh, and Periscope Simulators (PSIM) replacement. Also included are the Uninterrupted Power Supply (UPS) procurements, system procurements of Touchscreens displays across various sites, and updates to the Torpedo Relevancy Model(TRM). Procurements are installed within the two fiscal years immediately after the buy. Long Lead Times can extend up to 17 months.

[8] 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: FY 2018 Navy	Date: May 2017

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: 5662 / 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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	70.674	99.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	70.674	99.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	70.674	99.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares ($ in Millions)	-	0.133	0.119	-	-	-	-	-	-	-	-	0.252
Flyaway Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ($ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

ORDNANCE SUPPORT EQUIPMENT provides funds for the procurement of gun, missile, and ASW fire control and support equipment, mine components, FBM support equipment, and support for other expendable ordnance. This budget activity is coordinated by the Naval Sea Systems Command.

This line also provides funds to modify/upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment and to implement Training Enhancement Changes (TECs) to the trainer systems capabilities.

[P40A / TD002: SUBMARINE TRAINING DEVICE MODS]: Provides funding for modifications which are upgrades to submarine training systems and TECs which are centrally managed systems. These improvements/upgrades are required to keep training systems, such as the Ship Control Operator Trainer (SCOT) and Submarine Bridge Trainer (SBT), compatible with equivalent changes made to fleet operational equipment and to change trainer capabilities to meet emergent training requirements.

[P40A / TD006: SUB COAET]: TD006 SUBMARINE COMMON OPERATIONAL ANALYSIS AND EMPLOYMENT TRAINER (COAET)The COAET is an interactive, fundamental skills-level and employment skills trainer. It allows for introduction of new fleet requirements and upgrades. The purpose of these devices is to provide operator and introductory team training to submarine force personnel prior to entry into the full-up Submarine Multi Mission Team Trainer (SMMTT). It also provides supplemental training to off-load the heavily utilized attack center trainers. COAET provides training utilizing partial tactical builds and emulations of the latest Sonar and Combat Control Systems. These devices 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. Also provides funding for TECs, integration of Virtualized Tactical Control (VTAC), Advanced Processing Build (APB)/ Technical Insertion (TI), and Sonar Tactical Decision Aid (STDA) implementation.

[P40A / TD009: SMMTT PH3]: TD009 SUBMARINE MULTI MISSION TEAM TRAINER (SMMTT)To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated 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. Includes funding for TECs. The Combat Control System (CCS) AN/BYG-1 is installed on SSN/SSBN/SSGN Class submarines, and there are currently plans to further upgrade these systems with the hardware revisions which provide enhanced warfighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) AN/BQQ-10 phased upgrades are being installed with the next revision which provides enhanced warfighter capabilities. These CCS and ARCI upgrades to the AN/BYG1 and BQQ-10 systems directly impact shore based Team Trainers. SMMTT also includes annual Tactical Imaging TI/APB upgrades that support multiple classes of submarines. The Submarine Multi-Mission Team Trainer (SMMTT) supports operator, employment and training for enlisted and officer pipelines for these systems. The SMMTT provides operators and combat teams the ability to train ashore, prior to, and between deployments. The shore based training provides a means of maintaining team proficiency prior to ship deployment. SMMTT

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
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: 5662 / 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		

is also used for SSN/SSGN crew certification. SMMTT replaced all Military (MIL) Standard hardware in previous systems with commercial emulation hardware, enabling platform independence and wide area network capability. The use of Open Architecture (OA) trainer systems allows for the continuous growth of functional flexibility ultimately leading to employment training conducted for any submarine combat system. Plans are established to likewise upgrade submarine tactical systems to an OA, and the trainers will be compatible with the tactical interfaces. This program includes modifications to the functionality of the Periscope Simulator (PSIM) to provide common imaging training for CCS trainers and includes Electronic Surveillance Simulation Software. Recent tactical CCS change the interfaces for the software updates to the navigation submarine trainers.

SMMTT is also used for SSGN crew certification prior to crew flyaway for crew swapout. The use of Open Architecture (OA) trainer systems allows for the continuous growth of functional flexibility ultimately leading to employment training conducted for any submarine combat system.   .
Legacy SMMTT supports SSBN Crew Certification and predeployment training as required by the Type Commander. LSMMTT also supports SSNs that have not been modernized in the TI/APB process including SSN 774 class submarines. LSMMTT is a combination of tactical combat controls in sonar systems driven by simulation/stimulation devices and leverages additional trainer simulation/auxiliary ship systems.

FY16 procures 4 items: Procures one SSBN SMMTT Mod EDM, one SMMTT EPM updates to match the latest Fleet tactical build for SSNs and unique sensors; procures two SMMTT kit upgrades to appropriate APB and TI.

[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, Ship Self Defense System (SSDS), Navy Integrated Fire Control - Counter Air (NIFC-CA), and other Surface Warfare related Training Programs; Navigation, Hull, Mechanical and Electrical (HM&E), combat systems, engineering, damage control and amphibious warfare individual and team Technical Training Equipment, Training Devices, Training Unique Equipment and Training systems. 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 ship on-board training curriculum for the purpose of maintaining perishable operator and maintenance skills.

[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, Chief of Naval Operations (OPNAV) sponsored 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 the requirement for a high fidelity integrated air and missile defense and anti-submarine warfare training capability. Due to the cost prohibitive realities associated with modifying onboard high fidelity training systems, which currently meet only 60% of the CNO requirement for ship training systems to be commensurate with tactical system capability, this shore-based, high fidelity trainer is being procured. The CIAT will field in the Fleet Concentration Areas of San Diego and Norfolk in support of program of record Advanced Warfare Training (AWT). The effort began in FY 14 and supports procurement and installation of two systems across the FYDP. Installations will occur in San Diego and Norfolk. Funds also include costs associated with tactical and other software licensing, Information Assurance, computer program corrections and sustainment to ensure alignment with DON CIO Cyber requirements and ship tactical modernization.

[P5 / Navy Training System Plan (NTSP TTE/TD Mods)]: Funds surface and expeditionary training systems in multiple school houses in accordance with the results of CNO directed and OPNAV and Fleet sponsored studies, NTSP updates, and Technical Training Audits. One of the key items identified in the Fleet Review Panel of Surface Force Readiness, LPD 17 Class Wholeness Task Force, (Mine Countermeasures (MCM) Readiness Task Force, Navigation Wholeness Study, Chief of Naval Operations (OPNAV)-sponsored Surface Engineering Training Wholeness Review, Littoral Combat Ship (LCS) Front End Analysis (FEA), DDG 1000 wholeness review, and LHD 8/ LHA 6 Training Requirements Planning and Programming (TRPPM) analysis 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 Navy Training System Plan updates and 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. Collection, Holding and Transfer (CHT)
2. Controllable Pitch Propeller
3. LPD 17 Class Smoke Ejection
4. Damage Control
5. Firefighting
6. Fuel Oil Systems

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	**Date:** May 2017
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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

7. Anchoring, Mooring and Towing
8. Amphibious Assault Vehicle Handling, Stowage and Support
9. Handling and Stowing Boats and Small Craft
10. Hull Equipment
11. Shipboard Crane Systems
12. Underway Replenishment Systems
13. CIN A-651-0069 Controls, Governors, and Regulator Maintenance
14. CIN A-4H-0157 Advanced Steam Course
15. Fiber Optic Maintenance

[P5 / CSCS Modernization/Aegis Capability Build (ACB) Training Systems]: The Aegis Weapon System/SPY Radar Readiness Task Force, OPNAV-sponsored Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Aegis Ashore, Naval Integrated Fire Control-Counter Air (NIFC-CA) and C5I training requirements document that there is training shortfall for procurement and installation of ACB Technical Training Equipment (TTE) Simulation/Stimulation at the Aegis Training and Readiness Center (ATRC) Learning Site. The current ATRC training systems utilize expensive and maintenance-intensive ruggedized shipboard equipment which is obsolete and unsupportable. The funding in FY15 provides for hardware, updated software and installation of two new trainers which leverage IAMD components of the Combined IAMD/ASW Trainer (CIAT) technology and equipment, thus reducing Total Ownership Cost (TOC). Without this funding, existing training labs at ATRC will not be upgraded or maintained to provide accurate training and the required training lab for ACB Program of Record will not be completed. Aegis operators and maintainers will not be trained on accurate systems which will directly impact fleet readiness.

[P5 / Technical Training Equipment Modifications]: Funds procure schoolhouse modifications of end items in support of fleet training requirements including 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.

[P5 / Navigation Training Continuum]: Funds provide for implementation of formal navigation continuum training courses of instruction for enlisted Quartermasters, for enlisted navigation (non-maintenance) watch standers, and updates the Officer Navigation Training Continuum and improves waterfront navigation operator training to meet mandated requirements in the Surface Navigation System Navy Training Systems Plan. Funds provide for curriculum materials and training equipment.

[P5 / (EPAA) Aegis Ballistic Missile Defense (BMD) Ashore Team Trainer]: Funds the training system to train Navy Sailors who will man European Phased Adaptive Approach (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.

[P5 / Multi-Purpose Supporting Arms Trainer (MSAT)]: Funds for trainer system upgrades to include functionality upgrades to incorporate new equipment/ hardware and procedural changes to maintain training system annual certification requirements.

[P5 / LHA 6 and LHD 8 Life Cycle Training]: This line procures maintainer/operator training equipment and software applications for LHA-6/LHD-8 engineering systems in support of multiple courses of instruction at SWOS Learning Center Great Lakes, Norfolk, and San Diego, as required by several Navy Training System Plans (NTSPs).

[P5 / SURFACE MINOR MODS]: Funds modernization for training systems and sustainment for over 100 surface and expeditionary training systems in accordance with the results of CNO directed and OPNAV and Fleet sponsored studies from 2009 through 2013. 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, Mine Countermeasures (MCM) Readiness Task Force, Navigation Wholeness Study, OPNAV-sponsored 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 (NIFC-CA) and C5I training requirements documents, Littoral Combat Ship (LCS) Front End Analysis (FEA), DDG 1000 wholeness review, LHD 8/ LHA 6 Training Requirements Planning and Programming (TRPPM), Commander Naval Surface Forces (CNSF) manpower

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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:** 5662 / 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		

initiatives impact on readiness, and the Navy Inspector General (IG) report on Computer Based Training (CBT). The extensive inventory of training systems to support 16 classes of ships requires continual modernization and modification to ensure alignment with fleet systems while addressing technology obsolescence issues. Increased funding is budgeted to modernize systems, including the following:
 1. Anti-Submarine Tactical Air Controller (ASTAC) Simulation Upgrade
 2. Damage Control Wet Trainers Upgrades/Refresh
 3. DDG 51 Machinery Control System Maintenance Trainer
 4. Multi-Mission Team Trainer Upgrades/Lab Refresh
 5. Electrical Maintenance Training
 6. Air Conditioning and Refrigeration (AC&R) Maintenance Training
 7. Deck System Equipment Training
 8. Marine Sanitation Devices
 9. LCAC Team Trainer Overhaul/Upgrades
 10. Firefighting Team Trainers Upgrades/Refresh

Justification:
Note: The items contained within this budget line were funded in other lines in FY14 and prior.

TD009: SMMTT PH3 MODS
The increase in costs beginning in FY16 is due to additional Trainer Enhancement requirements directed by the TYCOM. The requirements include, but are not limited to Low Cost Conformal Array (LCCA) updates, All World Environmental Simulator (AWESIM) tech refresh, and Periscope Simulators (PSIM). Also included are the Uninterrupted Power Supply American Power Conversion(UPS/APC) procurements, system procurements of Touchscreens displays across various sites, and updates to the Torpedo Relevancy Model(TRM). These adjustments willl increase overall system capability.

Beginning in FY17, Submarine Training Device Mods are being budgeted/executed in BLI 5661. Surface Training Device Mods are being budgeted/executed in BLI 5664.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017

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 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**To Complete**	**Total**
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	97.514	83.022	0.000	83.022	102.465	80.155	76.404	65.470	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	97.514	83.022	0.000	83.022	102.465	80.155	76.404	65.470	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**97.514**	**83.022**	**0.000**	**83.022**	**102.465**	**80.155**	**76.404**	**65.470**	**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:

Note: Efforts within this budget line were consolidated from BLI's 1320, 2762, and 5662 in FY16 and prior.

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 / LCS SEAFRAME SIMULATORS]: Funds procure Littoral Combat Ship (LCS) training simulators and equipment for the respective LCS homeports and the Surface Warfare Officer School (SWOS) in Newport, Rhode Island. Simulators are needed to 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. Trainers are required for each ship variant, with initial procurements for the San Diego homeport and SWOS, followed by procurements for the Mayport homeport within the FYDP. Throughput of LCS crews requires more than one simulator of each variant in a homeport.

1.1) LCS Virtual Reality Labs & Networks - 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 Training. Without the VSTS network infrastructure, no systems within the LTF (currently being built in San Diego, and funded for Mayport) will interoperate or communicate with each other. Both LTFs are being built and designed around a central computer server farm that houses all courseware, training scenarios, and student records. Without the network infrastructure, there is no way to distribute the required courseware and software around the LTF, making the building essentially unusable. Without the VRLs, there is no method of presenting previously developed Immersive Virtual Ship Environment (IVSE) courseware to students. Modernization efforts include regular/scheduled updates/upgrades to VSTS and include procurement of new servers, relays, and switches, along with the procurement of replacement Virtual Reality Lab (electronic classroom) equipment.

1.2) LCS Mission Bay Trainers & Modernization - Enable the qualification, training, and team certification of the individuals and teams working in the Mission Bay. Scenarios include prepping and launching/ recovering of mission module off-hull remote vehicles and operating of the cranes, doors, and other associated equipment in the Mission Bay. They include full-scale replicas of the Mission Bay for both variants. Without the Mission Bay Trainer, there will be no 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: FY 2018 Navy		**Date:** May 2017
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 & 1.4) LCS Integrated Tactical Trainers & ITT Modernization - These are full scale simulators and/or stimulations of Tactical Software enabling integrated team training of Bridge, Combat Systems, Engineering, and Mission Package systems/watch stations. 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 (FY16 and follow) will include integrated crew served weapon simulators (discussed below). If the ITTs are not funded, 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. Without the shore-based trainers, the ships must get underway, and use real targets and Fleet assets, such as drones, and training aircraft for all of their training. The LCS Concept of Operations does not support such at-sea intensive training requirements. Modernization efforts include regular/scheduled updates and upgrades to the ITTs and include procurement of new servers, relays, and switches, as well as new consoles, joy sticks and communication equipment. IAW draft maturing Life Cycle Sustainment Plan for Trainers, Integrated Tactical Trainers (ITTs) require first upgrade to keep current with changing ship configurations five years after delivery of the trainer, and every two years after FY18 provides the second installment of funding for the INDEPENDENCE ITT in San Diego.

1.5 & 1.6) Bridge Trainers - 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) Crew Served Weapons Simulators - Funds support tactical deployment of small arms weapons stations topside. Crew Served weapons simulators will be integrated into procurement of follow-on ITTs. Without these simulators installed and integrated with the Integrated Tactical Trainers, the crew's tactical teams have no way to exercise ashore their Surface Warfare Detect-to-Engage sequence. The LCS ships are built to operate close to land. Proper execution and employment of their small arms (.50 Cal) are critical to the safety of the ship, and her crew.

1.8) 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 / LCS Integrated Tactical Trainers & ITT Modernization]: In accordance with draft maturing Life Cycle Sustainment Plan for Trainers, Integrated Tactical Trainers (ITTs) require first upgrade to keep current with changing ship configurations five years after delivery of the trainer, and every two years after. This provides the second installment of funding for the INDEPENDENCE ITT in San Diego.

[P40A / MB040 - BFTT SHIP SETS]: Note: FY16 BFTT Ship Set Procurements are installed in FY17. The procurements costs are shown in FY16 in the BLI 2762 budget.

[P40A / CVN 78 Class Training Equipment]: This provides for several initiatives oriented to developing the formal life cycle training solutions for multiple mission critical CVN 78 contractor furnished equipment (CFE) systems. Funds procure CVN 78 Class training simulators and equipment for the applicable Navy Education and Training Command Centers of Excellence to achieve Ready For Training (RFT). In particular, the CFE items procured include: training simulators, ship system mock-ups, electronic classrooms, intelligent tutoring systems, and all engineering and facilities upgrades necessary for installation at the 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 Centers of Excellence in Norfolk, Great Lakes, and at SWOS Newport. Trainers are required for each major new CVN 78 specific system, with initial procurements for the Norfolk homeport and SWOS, followed by procurements for the Great Lakes training center and the homeport of San Diego. This funding represents initial training systems procurement for Advanced Weapons Elevator (AWE), Machinery Control and Monitoring System (MCMS), 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). Additionally, this funding supports all associated site preparations and installation costs for the procured training systems. 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.

[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, Ship Self Defense System (SSDS), and other Surface Warfare related Training Programs; Navigation, Hull, Mechanical and Electrical (HM&E), combat systems, engineering, damage control and amphibious warfare individual and team Technical Training Equipment, 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 CNO High Velocity Learning and Ready Relevant Learning intent. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and fleet training

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
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		

requirements as dictated by the Surface and Expeditionary Warfare Training Plan (SEWTP). Additionally, funds support establishment and improvement of ship on-board training curriculum for the purpose of maintaining perishable operator and maintenance skills.

[P5 / Navigation Trainers]: NAVIGATION TRAINERS - Funds are provided for modifications/upgrades to Navigation Shore Based Trainers.

[P5 / AEGIS Ashore Trainer/C4I/Tech Refresh]: AEGIS ASHORE TRAINER/C4I/Tech Refresh -Funds modernization, delivery, installation and life-cycle maintenance support of 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 system to train Navy Sailors who will man European Phased Adaptive Approach (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.

[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, Chief of Naval Operations (OPNAV) sponsored 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 integrated air and missile defense and anti-submarine warfare training capability. Due to the cost and operations prohibitive realities associated with modifying onboard training systems, which currently meet only 60% of the CNO 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 Baseline 9 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 program of record Phase II, Advanced Warfare Training (AWT). The effort began in FY 14 and supports procurement and installation of two systems across the FYDP. 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.

[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 CNO directed and OPNAV and Fleet sponsored studies, NTSP updates, and Technical Training Audits from 2011 through 2016. One of the key items identified in the Fleet Review Panel of Surface Force Readiness, LPD 17 Class Wholeness Task Force, Navigation Wholeness Study, Chief of Naval Operations (OPNAV)-sponsored 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 130 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

[P5 / CSCS Modernization/Aegis Capability Build (ACB) Training Systems]: Funds the procurement and installation of AEGIS Advanced Capability Build (ACB) Technical Training Equipment (TTE) in response to the Aegis Weapon System/SPY Radar Readiness Task Force, OPNAV-sponsored Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Aegis Ashore, Naval Integrated Fire Control-Counter Air (NIFC-CA) and C5I training requirements document that there is training shortfall for procurement and installation of ACB Technical Training Equipment (TTE) Simulation/Stimulation at the Aegis Training and Readiness Center (ATRC) Learning Site.

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		**Date:** May 2017
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 / 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 (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.

[P5 / LHA 6 and LHD 8 Life Cycle Training]: This line procures maintainer/operator training equipment and software applications for LHA-6/LHD-8 engineering systems in support of multiple courses of instruction at SWOS Learning Center Great Lakes, Norfolk, and San Diego, as required by several Navy Training System Plans (NTSPs).

[P5 / SURFACE MINOR MODS]: Funds modernization for training systems and sustainment for over 200 surface and expeditionary training systems in accordance with the results of CNO directed and OPNAV 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, OPNAV-sponsored 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 (NIFC-CA) 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). The extensive inventory of training systems to support 16 classes of ships requires continual modernization and modification to ensure alignment with fleet systems while addressing technology obsolescence issues. Funding is budgeted to modernize the following systems:
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. LCAC/SSC Team Trainer Overhaul/Upgrades
8. Firefighting Team Trainers Upgrades/Refresh
9. Advanced Electronic Attach (EA)
10. Anti-Submarine Warfare (ASW) Weapons Tactics Instructors (WTI)
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)/Virtual Aegis Combat System Simulator
17. LCS Training Systems

[P5 / FFT/SLEP/MODULAR TRAINER]: FFT/SLEP/MODULAR TRAINER-Funds are provided for the Service Life Extension Program (SLEP) Firefighter Trainer (FFT).

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

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

Increased materials and quantities installed in FY18 are required to meet cyber security requirements and to maintain connectivity with NCTE to meet shipboard integrated training demands.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy	**Date:** May 2017

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

[P3A - 2 / MB040 BFTT UPGRADE KITS]: 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.

Changes from FY17 - FY 18 include a $1.8M increase to procure more materials needed to meet cybersecurity requirements and to maintain connectivity with NCTE to meet shipboard integrated training demands.

The increase in field change kits being procured and installed in FY18 are required to rapidly update installations in order to meet cyber security requirements and timelines to maintain cyber security accreditations.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy							**Date:** May 2017	

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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					- / 0.000	- / -	- / 29.166	- / 24.826	- / -	- / 24.826
P-5	1 / TS004 Surface Training Device Mods [TS004]					- / 0.000	- / 0.000	- / 47.493	- / 26.176	- / 0.000	- / 26.176
P-3a	1 / MB040 - BFTT SHIP SETS (TBD)					- / 0.000	- / 0.000	- / 14.235	- / 20.595	- / 0.000	- / 20.595
P-3a	2 / MB040 BFTT UPGRADE KITS (TBD)					- / 0.000	- / 0.000	- / 6.620	- / 11.425	- / 0.000	- / 11.425
P-40	**Total Gross/Weapon System Cost**					**- / 0.000**	**- / 0.000**	**- / 97.514**	**- / 83.022**	**- / 0.000**	**- / 83.022**

*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 2018 funding provides the Fleet with the required training equipment for the respective LCS homeports and the Surface Warfare Officer School (SWOS). Training equipment is required to satisfy the Train to Qualify Key Performance Parameter (KPP) requirement of the Capabilities Development Document. Required procurements of hardware and software associated with building the trainers and installing this hardware and software at the LCS Training Facilities in each homeport and at SWOS. Trainers are required for both of the ship variants.

The increase in BFTT ship sets and field change kits being procured and installed in FY18 are necessary to meet the requirement to rapidly update installations in order to meet cyber security requirements and timelines to maintain cybersecurity accreditations.

Increase in FY18 funding for CVN 78 is required for procurement of Contractor Furnished Equipment (CFE) systems Technical Training Equipment (TTE) and Training Systems Installation Planning (TSIP) costs to establish a permanent life cycle training solution by the Ready for Training (RFT) date. The phasing of this requirement is based on achieving RFT dates for various shipboard systems in FY 19-21 based on system complexity and procurement lead times, which is aligned to the CVN78 deployment ready status and the INITIAL training requirements of the CVN79 Crew.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
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

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) LCS SEAFRAME SIMULATORS [1]																				
1.1) LCS Virtual Ship Training System	A		-	-	-	-	-	-	-	-	4.641	-	-	4.864	-	-	-	-	-	4.864
1.2) LCS Mission Bay Trainers & Modernization	A		-	-	-	-	-	-	-	-	7.728	-	-	-	-	-	-	-	-	-
1.3) LCS Integrated Tactical Trainers & ITT Modernization [2]	A		-	-	-	-	-	-	-	-	-	-	-	7.952	-	-	-	-	-	7.952
1.5) LCS BridgeTrainers (SWOS)	A		-	-	-	-	-	-	-	-	4.278	-	-	-	-	-	-	-	-	-
1.6) LCS Bridge Trainer (Mayport)	A		-	-	-	-	-	-	-	-	2.139	-	-	-	-	-	-	-	-	-
1.7) Crew Served Weapons Simulators	A		-	-	-	-	-	-	-	-	0.350	-	-	-	-	-	-	-	-	-
Subtotal: 1) LCS SEAFRAME SIMULATORS			*-*	*-*	*0.000*	*-*	*-*	*-*	*-*	*-*	*19.136*	*-*	*-*	*12.816*	*-*	*-*	*-*	*-*	*-*	*12.816*
2) MB040 - BFTT SHIP SETS																				
2.1) MB040 - BFTT SHIP SETS [3]	A		-	-	-	-	-	-	481,545.45	11	5.297	-	-	-	-	-	-	-	-	-
Subtotal: 2) MB040 - BFTT SHIP SETS			*-*	*-*	*0.000*	*-*	*-*	*-*	*-*	*-*	*5.297*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
3) CVN 78 Class Training Equipment																				
3.1) CVN 78 Class Training Equipment	A		-	-	-	-	-	-	-	-	4.733	-	-	12.010	-	-	-	-	-	12.010
Subtotal: 3) CVN 78 Class Training Equipment			*-*	*-*	*0.000*	*-*	*-*	*-*	*-*	*-*	*4.733*	*-*	*-*	*12.010*	*-*	*-*	*-*	*-*	*-*	*12.010*
Total			-	-	0.000	-	-	-	-	-	29.166	-	-	24.826	-	-	-	-	-	24.826

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

Footnotes:

[1] Consolidated tasking to better reflect the descriptions of purchased items.

[2] Provides the second installment of funding for the INDEPENDENCE ITT in San Diego.

[3] FY17 quantities represent installations associated with procurements made in FY16 under BLI 2762.

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Exhibit P-5, Cost Analysis: FY 2018 Navy		Date: May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	0.000	0.000	47.493	26.176	0.000	26.176
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	0.000	0.000	47.493	26.176	0.000	26.176
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	0.000	0.000	47.493	26.176	0.000	26.176
(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.

	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Cost Elements	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 (4)	-	-	0.000	-	-	0.000	-	-	1.700	-	-	1.800	-	-	0.000	-	-	1.800
1.1.2) AEGIS Ashore Trainer/C4I/Tech Refresh (5)	-	-	0.000	-	-	0.000	-	-	10.900	-	-	3.200	-	-	0.000	-	-	3.200
1.1.3) Combined IAMD/ASW Trainer (CIAT) (6)	-	-	0.000	-	-	0.000	-	-	16.160	-	-	15.300	-	-	0.000	-	-	15.300
1.1.4) Navy Training System Plan (NTSP TTE/TD Mods) (7)	-	-	0.000	-	-	0.000	-	-	7.042	-	-	2.100	-	-	0.000	-	-	2.100
1.1.5) CSCS Modernization/Aegis Capability Build (ACB) Training Systems (8)	-	-	0.000	-	-	0.000	-	-	1.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.6) Technical Training Equipment Modifications (9)	-	-	0.000	-	-	0.000	-	-	0.730	-	-	0.741	-	-	0.000	-	-	0.741
1.1.7) LHA 6 and LHD 8 Life Cycle Training (10)	-	-	0.000	-	-	0.000	-	-	3.600	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	41.132	-	-	23.141	-	-	0.000	-	-	23.141

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Exhibit P-5, Cost Analysis: FY 2018 Navy																		Date: May 2017		

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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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: Flyaway Cost	-	-	*0.000*	-	-	*0.000*	-	-	*41.132*	-	-	*23.141*	-	-	*0.000*	-	-	*23.141*
Hardware - Trainers Cost Cost																		
Recurring Cost																		
2.1.1) SURFACE MINOR MODS (11)	-	-	0.000	-	-	0.000	-	-	4.061	-	-	1.535	-	-	0.000	-	-	1.535
2.1.2) FFT/SLEP/ MODULAR TRAINER (12)	-	-	0.000	-	-	0.000	-	-	1.900	-	-	1.400	-	-	0.000	-	-	1.400
2.1.3) FCA TRAINERS (13)	-	-	0.000	-	-	0.000	-	-	0.400	-	-	0.100	-	-	0.000	-	-	0.100
Subtotal: Recurring Cost	-	-	*0.000*	-	-	*0.000*	-	-	*6.361*	-	-	*3.035*	-	-	*0.000*	-	-	*3.035*
Subtotal: Hardware - Trainers Cost Cost	-	-	*0.000*	-	-	*0.000*	-	-	*6.361*	-	-	*3.035*	-	-	*0.000*	-	-	*3.035*
Gross/Weapon System Cost	-	-	**0.000**	-	-	**0.000**	-	-	**47.493**	-	-	**26.176**	-	-	**0.000**	-	-	**26.176**

Footnotes:

(4) NAVIGATION TRAINING SUPPORT - Funds are provided for modifications/upgrades to Navigation Shore Based Trainers. Increased funding in FY17 accounts for modifications/upgrades to an additional trainer location, as well as new IA requirements for Navigation, Seamanship, and Ship handling Training (NSST) systems.

(5) AEGIS ASHORE TRAINER/C4I/Tech Refresh -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. FY17 funds are provided to procure and install AATT BMD 5.1 and C4I upgrades. FY18 funds are provided for the procurement of separate AATT computer hardware and software to run Information Assurance (IA) validation events. Currently the actual trainer is used for such events, and IA validation events are time intensive and risk rendering the AATT inoperable.

(6) COMBINED IAMD/ASW TRAINER (CIAT) -Funds are provided to procure and install hardware for a Shore Based IAMD and ASW Trainer. Funds are required across the FYDP for tactical and other software licensing (all baselines), Information Assurance and routine software and hardware modifications of two CIAT systems and ensures alignment with DON CIO Cyber requirements and tactical ship modernization. Additionally, procuring and maintaining high fidelity training devices at Fleet Concentration Areas and Navy schoolhouses for operators is less cost than the traditional procuring of lower fidelity ship embedded training systems.

(7) NAVY TRAINING SYSTEM PLAN (NTSP Technical Training Equipment (TTE)/Training Device (TD) Mods) - Funds are provided for the procurement and installation of training equipment and associated logistic support package as outlined in the NTSPs. Failure to update these courses will decrease sailors ability to operate and maintain these systems and will negatively impact Fleet readiness.

(8) Center for Surface Combat Systems (CSCS) Modernization/Aegis Capability Build (ACB) Training Systems - Funds are provided for upgrades to current CSCS and ATRC training systems to eliminate reliance on outdated and maintenance-intensive technical training equipment. Procure and install equipment which will allow for training on Aegis ACB 16 and install simulation/stimulation to be used in training systems for ATRC and CSCS Aegis curriculum.

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Exhibit P-5, Cost Analysis: FY 2018 Navy		**Date:** May 2017
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:**	

(9) Technical Training Equipment Modifications - 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.

(10) LHA 6 and LHD 8 Life Cycle Training - This line procures maintainer/operator training equipment and software applications for LHA-6/LHD-8 engineering systems in support of multiple courses of instruction at SWOS Learning Center Great Lakes, Norfolk, and San Diego, as required by several Navy Training System Plans (NTSPs).

(11) SURFACE MINOR MODS - 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 Surface and Expeditionary Warfare Training Plan (SEWTP).

(12) FFT/SLEP/MODULAR TRAINER-Funds are provided for the Service Life Extension Program (SLEP) Firefighter Trainer (FFT). Increased funding in FY17 is required to accomplish all required SLEP tasking and to facilitate the upgrade of 19F4A Firefighter Trainer in Norfolk and San Diego to modern Programmable Logic Controller (PLC) architecture.

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

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017			
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 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	0.000	0.000	14.235	20.595	0.000	20.595
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	0.000	0.000	14.235	20.595	0.000	20.595
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**0.000**	**0.000**	**14.235**	**20.595**	**0.000**	**20.595**
(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 Constuctive (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 SSDS installation. T46D's for SSDS include additional materials and units to be integrated for stimulation of the ships sensors.

FY17 - TSTC/BFTT Ship Set funding will procure (19) T46D's and subsequent variants of hardware and software Build 5.x series in support of AN/SQQ-89 upgrades, AEGIS Baseline 9 upgrades and SSDS upgrades. Installation funding supports installation of (11) BFTT AN/USQ-T46D Systems.

FY18 - TSTC/ATD/BFTT Ship Set funding will procure (9) T46D's and (2) T52's and subsequent variants of hardware and software Build 5.x series in support of AN/SQQ-89 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 (19) BFTT AN/USQ-T46D Systems. Additional costs will be incurred to procure more materials needed to meet cyber security requirements and to maintain connectivity with NCTE to meet shipboard integrated training demands.

Increased materials and quantities installed in FY18 are required to meet cyber security requirements and to maintain connectivity with NCTE to meet shipboard integrated training demands.

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** 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	- / -	- / -	19 / 14.235	11 / 11.000	- / -	11 / 11.000
Subtotal: Recurring	- / 0.000	- / -	- / 14.235	- / 11.000	- / -	- / 11.000
Subtotal: MB040 - BFTT SHIP SETS	- / -	- / -	19 / 14.235	11 / 11.000	- / -	11 / 11.000
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / 14.235	- / 11.000	- / -	- / 11.000
Installation						
Modification Item 1 of 1: MB040 - BFTT SHIP SETS	- / 0.000	- / 0.000	- / 0.000	- / 9.595	- / 0.000	- / 9.595
Subtotal: Installation	- / 0.000	- / 0.000	- / -	- / 9.595	- / -	- / 9.595
Total						
Total Cost (Procurement + Support + Installation)	**0.000**	**0.000**	**14.235**	**20.595**	**0.000**	**20.595**

Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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	Manufacturer Location: Various
Administrative Leadtime *(in Months)*: 2	Production Leadtime *(in Months)*: 9

Dates	FY 2016	FY 2017	FY 2018
Contract Dates		Dec 2016	Dec 2017
Delivery Dates		Sep 2017	Sep 2018

Installation Information

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

Installation Cost	Prior Years Qty *(Each)* / Total Cost *($ M)*	FY 2016 Qty *(Each)* / Total Cost *($ M)*	FY 2017 Qty *(Each)* / Total Cost *($ M)*	FY 2018 Base Qty *(Each)* / Total Cost *($ M)*	FY 2018 OCO Qty *(Each)* / Total Cost *($ M)*	FY 2018 Total Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	19 / 9.595	0 / 0.000	19 / 9.595
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	19 / 9.595	0 / 0.000	19 / 9.595

Installation Schedule

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	-	-	-	-	2	5	7	5
Out	-	-	-	-	-	-	-	-	-	-	7	7	5

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost ($ in Millions)	0.000	0.000	6.620	11.425	0.000	11.425
Less PY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) ($ in Millions)	0.000	0.000	6.620	11.425	0.000	11.425
Plus CY Advance Procurement ($ in Millions)	-	-	-	-	-	-
Total Obligation Authority ($ in Millions)	**0.000**	**0.000**	**6.620**	**11.425**	**0.000**	**11.425**
(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:
BFTT/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, BEWT, 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.

FY17 - 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 Software Baselines 3.5.1 & 5.0 upgrades, and Training Simulation Stimulation System (TSSS) legacy radar interface upgrades. Upgrade BFTT/TSTC Shipboard Connectivity Suite (SCS) through a Tech Refresh. 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.

FY18 - 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 Software Baselines 3.5.1 & 5.0 upgrades, 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 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.

Changes from FY17 - FY 18 include a $1.8M increase to procure more materials needed to meet cybersecurity requirements and to maintain connectivity with NCTE to meet shipboard integrated training demands.

The increase in field change kits being procured and installed in FY18 are required to rapidly update installations in order to meet cyber security requirements and timelines to maintain cyber security accreditations.

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Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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** Qty (Each) / Total Cost ($ M)	**FY 2016** Qty (Each) / Total Cost ($ M)	**FY 2017** Qty (Each) / Total Cost ($ M)	**FY 2018 Base** Qty (Each) / Total Cost ($ M)	**FY 2018 OCO** Qty (Each) / Total Cost ($ M)	**FY 2018 Total** 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 [14]	- / -	- / -	96 / 1.549	151 / 4.423	- / -	151 / 4.423
Subtotal: Recurring	- / 0.000	- / -	- / 1.549	- / 4.423	- / -	- / 4.423
Subtotal: MB040 BFTT UPGRADE KITS	- / -	- / -	96 / 1.549	151 / 4.423	- / -	151 / 4.423
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / 1.549	- / 4.423	- / -	- / 4.423
Installation						
Modification Item 1 of 1: MB040 BFTT UPGRADE KITS	- / 0.000	- / 0.000	- / 5.071	- / 7.002	- / 0.000	- / 7.002
Subtotal: Installation	- / 0.000	- / -	- / 5.071	- / 7.002	- / -	- / 7.002
Total						
Total Cost (Procurement + Support + Installation)	0.000	0.000	6.620	11.425	0.000	11.425

Exhibit P-3a, Individual Modification: FY 2018 Navy		**Date:** May 2017
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	Manufacturer Location: VARIOUS
Administrative Leadtime *(in Months)*: 3	Production Leadtime *(in Months)*: 3

Dates	**FY 2016**	**FY 2017**	**FY 2018**
Contract Dates		Dec 2016	Dec 2017
Delivery Dates		Mar 2017	Mar 2018

Installation Information

Method of Implementation: AIT:: Installation Name: BFTT UPGRADE KITS

Installation Cost	**Prior Years** Qty *(Each)* / Total Cost *($ M)*	**FY 2016** Qty *(Each)* / Total Cost *($ M)*	**FY 2017** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Base** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 OCO** Qty *(Each)* / Total Cost *($ M)*	**FY 2018 Total** Qty *(Each)* / Total Cost *($ M)*
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	96 / 5.071	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	151 / 7.002	0 / 0.000	151 / 7.002
Total	- / -	- / -	96 / 5.071	151 / 7.002	0 / 0.000	151 / 7.002

Installation Schedule

	PYS	**FY 2016**				**FY 2017**				**FY 2018**			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
In	-	-	-	-	-	25	26	25	20	39	42	37	33
Out	-	-	-	-	-	25	26	25	20	39	42	37	33

Footnotes:

[14] Changes from FY17 - FY 18 are: Increased FY18 $1.8M to procure more materials needed to meet cybersecurity requirements and to maintain connectivity with NCTE to meet shipboard integrated training demands. Increased quantities of field change kits being procured and installed in FY18 and out, and includes an increase in materials needed to meet cybersecurity requirements for maintaining connectivity with NCTE to meet shipboard integrated training demands. Increased kit quantities needed to rapidly update installations to meet cyber security requirements and timelines to maintain cybersecurity accreditations.