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**Department of Defense
Fiscal Year (FY) 2020 Budget Estimates**

March 2019



Navy

Justification Book Volume 1 of 1

Procurement, Marine Corps

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The estimated cost of this report for the Department of the Navy (DON) is \$33,340.

The estimated total cost for supporting the DON budget justification material is approximately \$1,803,116 for the 2019 fiscal year. This includes \$81,351 in supplies and \$1,721,765 in labor.

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Department of Defense Appropriations Act, 2020

Procurement, Marine Corps

For expenses necessary for the procurement, manufacture, and modification of missiles, armament, military equipment, spare parts, and accessories therefore; plant equipment, appliances, and machine tools, and installation thereof in public and private plants; reserve plant and Government and contractor-owned equipment layaway; vehicles for the Marine Corps, including the purchase of passenger motor vehicles for replacement only; and expansion of public and private plants, including land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title, \$3,111,038,000, to remain available for obligation until September 30, 2022 of which \$141,431,000 shall be available for the Marine Corps Reserve.

FY 2020 Overseas Contingency Operations funding can be separated into the following categories:

- OCO for Direct War Costs (\$20,589,000): Direct War costs are those combat or direct combat support costs that will not continue to be expended once combat operations end at major contingency locations.
- OCO for Enduring Requirements (\$0): OCO for Enduring Requirements are enduring in-theater and in-CONUS costs that will likely remain after combat operations cease, and have previously been funded in OCO.
- OCO for Base Requirements (\$0): OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2018 (Base + OCO) -----	FY 2019 Base Enacted -----	FY 2019 OCO Enacted -----	FY 2019 Total Enacted -----
Procurement, Marine Corps	2,019,194	2,719,870	58,023	2,777,893
Total Department of the Navy	2,019,194	2,719,870	58,023	2,777,893

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2020 Base -----	FY 2020 OCO for Base Requirements -----	FY 2020 OCO for Direct War and Enduring Costs -----	FY 2020 Total OCO -----
Procurement, Marine Corps	3,090,449		20,589	20,589
Total Department of the Navy	3,090,449		20,589	20,589

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2020 Total (Base + OCO) -----
Procurement, Marine Corps	3,111,038
Total Department of the Navy	3,111,038

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Procurement, Marine Corps

Budget Activity -----	FY 2018 (Base + OCO) -----	FY 2019 Base Enacted -----	FY 2019 OCO Enacted -----	FY 2019 Total Enacted -----
02. Weapons and combat vehicles	366,810	532,696		532,696
03. Guided missiles and equipment	116,203	86,346		86,346
04. Communications And Electronics Equipment	970,011	1,161,400	5,583	1,166,983
05. Support Vehicles	315,431	636,923	44,440	681,363
06. Engineer and Other Equipment	221,630	278,108	8,000	286,108
07. Spares and Repair Parts	29,109	24,397		24,397
Total Procurement, Marine Corps	2,019,194	2,719,870	58,023	2,777,893

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: Procurement, Marine Corps

Budget Activity -----	FY 2020 Base -----	FY 2020 OCO for Base Requirements -----	FY 2020 OCO for Direct War and Enduring Costs -----	FY 2020 Total OCO -----
02. Weapons and combat vehicles	597,936			
03. Guided missiles and equipment	307,681		16,919	16,919
04. Communications And Electronics Equipment	1,252,532			
05. Support Vehicles	608,947			
06. Engineer and Other Equipment	289,883		3,670	3,670
07. Spares and Repair Parts	33,470			
Total Procurement, Marine Corps	3,090,449		20,589	20,589

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Procurement, Marine Corps

Budget Activity -----	FY 2020 Total (Base + OCO) -----
02. Weapons and combat vehicles	597,936
03. Guided missiles and equipment	324,600
04. Communications And Electronics Equipment	1,252,532
05. Support Vehicles	608,947
06. Engineer and Other Equipment	293,553
07. Spares and Repair Parts	33,470
Total Procurement, Marine Corps	3,111,038

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity	Cost	FY 2019 Base Enacted Quantity	Cost	FY 2019 OCO Enacted Quantity	Cost	FY 2019 Total Enacted Quantity	Cost	S e c
Budget Activity 02: Weapons and combat vehicles											

Tracked Combat Vehicles											
1	AAV7A1 PIP	A		85,362		96,836			96,836		U
2	Amphibious Combat Vehicle 1.1	A	26	156,693	30	167,478		30	167,478		U
3	LAV PIP	A		7,322		36,652			36,652		U
Artillery and Other Weapons											
4	155mm Lightweight Towed Howitzer	B		20,259		37,158			37,158		U
5	Artillery Weapons System	A		60,103		130,981			130,981		U
6	Weapons and Combat Vehicles Under \$5 Million	A		17,293		40,687			40,687		U
Other Support											
7	Modification Kits	A		19,778		22,904			22,904		U
				-----		-----			-----		
Total Weapons and combat vehicles				366,810		532,696			532,696		
Budget Activity 03: Guided missiles and equipment											

Guided Missiles											
8	Ground Based Air Defense	A		10,026		18,334			18,334		U
9	Anti-Armor Missile-Javelin	A	233	37,555	5	3,020		5	3,020		U
10	Family Anti-Armor Weapon Systems (FOAAWS)	A		19,053		13,760			13,760		U
11	Anti-Armor Missile-TOW	A		49,569		51,232			51,232		U

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	FY 2020 Base Cost	FY 2020 OCO for Base Requirements Quantity	FY 2020 OCO for Base Requirements Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	FY 2020 OCO for Direct War and Enduring Costs Cost	FY 2020 Total OCO Quantity	FY 2020 Total OCO Cost	Se
Budget Activity 02: Weapons and combat vehicles											
Tracked Combat Vehicles											
1	AAV7A1 PIP	A		39,495							U
2	Amphibious Combat Vehicle 1.1	A	56	317,935							U
3	LAV PIP	A		60,734							U
Artillery and Other Weapons											
4	155mm Lightweight Towed Howitzer	B		25,065							U
5	Artillery Weapons System	A		100,002							U
6	Weapons and Combat Vehicles Under \$5 Million	A		31,945							U
Other Support											
7	Modification Kits	A		22,760							U
Total Weapons and combat vehicles				597,936							
Budget Activity 03: Guided missiles and equipment											
Guided Missiles											
8	Ground Based Air Defense	A		175,998							U
9	Anti-Armor Missile-Javelin	A	97	20,207							U
10	Family Anti-Armor Weapon Systems (FOAAWS)	A		21,913							U
11	Anti-Armor Missile-TOW	A		60,501							U

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(Dollars in Thousands)

Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
Budget Activity 02: Weapons and combat vehicles -----					
Tracked Combat Vehicles					
1	AAV7A1 PIP	A		39,495	U
2	Amphibious Combat Vehicle 1.1	A	56	317,935	U
3	LAV PIP	A		60,734	U
Artillery and Other Weapons					
4	155mm Lightweight Towed Howitzer	B		25,065	U
5	Artillery Weapons System	A		100,002	U
6	Weapons and Combat Vehicles Under \$5 Million	A		31,945	U
Other Support					
7	Modification Kits	A		22,760	U
Total Weapons and combat vehicles				597,936	
Budget Activity 03: Guided missiles and equipment -----					
Guided Missiles					
8	Ground Based Air Defense	A		175,998	U
9	Anti-Armor Missile-Javelin	A	97	20,207	U
10	Family Anti-Armor Weapon Systems (FOAAWS)	A		21,913	U
11	Anti-Armor Missile-TOW	A		60,501	U

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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity	Cost	FY 2019 Base Enacted Quantity	Cost	FY 2019 OCO Enacted Quantity	Cost	FY 2019 Total Enacted Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
12	Guided MLRS Rocket (GMLRS)	A									U
	Total Guided missiles and equipment			116,203		86,346				86,346	
Budget Activity 04: Communications And Electronics Equipment											

Command and Control Systems											
13	Common Aviation Command and Control System (C	A		48,295		32,587				32,587	U
Repair and Test Equipment											
14	Repair and Test Equipment	A		38,117		45,656				45,656	U
Other Support (Tel)											
15	Modification Kits	A		750		971				971	U
Command and Control System (Non-Tel)											
16	Items Under \$5 Million (Comm & Elec)	A		43,294		67,428				67,428	U
17	Air Operations C2 Systems	A		14,107		14,269				14,269	U
Radar + Equipment (Non-Tel)											
18	Radar Systems	A		14,811		6,694				6,694	U
19	Ground/Air Task Oriented Radar (G/ATOR)	A	3	134,726	6	220,416		6	220,416		U
20	RQ-21 UAS		4	82,641							U
Intell/Comm Equipment (Non-Tel)											
21	GCSS-MC	A		1,990		1,187				1,187	U
22	Fire Support System	A		22,260		59,343	5,583		64,926		U

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Total Obligational Authority
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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Base		FY 2020 OCO for Base Requirements		FY 2020 OCO for Direct War and Enduring Costs		FY 2020 Total OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
12	Guided MLRS Rocket (GMLRS)	A	210	29,062			130	16,919	130	16,919	U
Total Guided missiles and equipment				307,681				16,919		16,919	
Budget Activity 04: Communications And Electronics Equipment											
Command and Control Systems											
13	Common Aviation Command and Control System (C	A		37,203							U
Repair and Test Equipment											
14	Repair and Test Equipment	A		55,156							U
Other Support (Tel)											
15	Modification Kits	A		4,945							U
Command and Control System (Non-Tel)											
16	Items Under \$5 Million (Comm & Elec)	A		112,124							U
17	Air Operations C2 Systems	A		17,408							U
Radar + Equipment (Non-Tel)											
18	Radar Systems	A		329							U
19	Ground/Air Task Oriented Radar (G/ATOR)	A	8	273,022							U
20	RQ-21 UAS										U
Intell/Comm Equipment (Non-Tel)											
21	GCSS-MC	A		4,484							U
22	Fire Support System	A		35,488							U

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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
12	Guided MLRS Rocket (GMLRS)	A	340	45,981	U

Total Guided missiles and equipment				324,600	
Budget Activity 04: Communications And Electronics Equipment					

Command and Control Systems					
13	Common Aviation Command and Control System (C	A		37,203	U
Repair and Test Equipment					
14	Repair and Test Equipment	A		55,156	U
Other Support (Tel)					
15	Modification Kits	A		4,945	U
Command and Control System (Non-Tel)					
16	Items Under \$5 Million (Comm & Elec)	A		112,124	U
17	Air Operations C2 Systems	A		17,408	U
Radar + Equipment (Non-Tel)					
18	Radar Systems	A		329	U
19	Ground/Air Task Oriented Radar (G/ATOR)	A	8	273,022	U
20	RQ-21 UAS				U
Intell/Comm Equipment (Non-Tel)					
21	GCSS-MC	A		4,484	U
22	Fire Support System	A		35,488	U

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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
23	Intelligence Support Equipment	B	56,738	72,968		72,968	U
25	Unmanned Air Systems (Intel)	A	10,154	3,848		3,848	U
26	DCGS-MC	A	12,883	16,081		16,081	U
27	UAS Payloads	A	22,008				U
	Other Support (Non-Tel)						
30	Next Generation Enterprise Network (NGEN)	A	97,014	82,120		82,120	U
31	Common Computer Resources	A	58,810	62,904		62,904	U
32	Command Post Systems	A	203,860	115,873		115,873	U
33	Radio Systems	A	28,361	251,412		251,412	U
34	Comm Switching & Control Systems	A	38,864	31,175		31,175	U
35	Comm & Elec Infrastructure Support	A	36,114	72,842		72,842	U
36	Cyberspace Activities	A					U
999	Classified Programs		4,214	3,626		3,626	U
			-----	-----	-----	-----	
	Total Communications And Electronics Equipment		970,011	1,161,400	5,583	1,166,983	
	Budget Activity 05: Support Vehicles						

	Administrative Vehicles						
37	Commercial Cargo Vehicles	A	56,953	23,864		23,864	U
	Tactical Vehicles						
38	Motor Transport Modifications	A	23,371	11,392	44,440	55,832	U

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Total Obligational Authority
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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
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23	Intelligence Support Equipment	B		56,896							U
25	Unmanned Air Systems (Intel)	A		34,711							U
26	DCGS-MC	A		32,562							U
27	UAS Payloads	A									U
	Other Support (Non-Tel)										
30	Next Generation Enterprise Network (NGEN)	A		114,901							U
31	Common Computer Resources	A		51,094							U
32	Command Post Systems	A		108,897							U
33	Radio Systems	A		227,320							U
34	Comm Switching & Control Systems	A		31,685							U
35	Comm & Elec Infrastructure Support	A		21,140							U
36	Cyberspace Activities	A		27,632							U
999	Classified Programs			5,535							U
	Total Communications And Electronics Equipment			1,252,532							
	Budget Activity 05: Support Vehicles										
	Administrative Vehicles										
37	Commercial Cargo Vehicles	A		28,913							U
	Tactical Vehicles										
38	Motor Transport Modifications	A		19,234							U

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
23	Intelligence Support Equipment	B		56,896	U
25	Unmanned Air Systems (Intel)	A		34,711	U
26	DCGS-MC	A		32,562	U
27	UAS Payloads	A			U
	Other Support (Non-Tel)				
30	Next Generation Enterprise Network (NGEN)	A		114,901	U
31	Common Computer Resources	A		51,094	U
32	Command Post Systems	A		108,897	U
33	Radio Systems	A		227,320	U
34	Comm Switching & Control Systems	A		31,685	U
35	Comm & Elec Infrastructure Support	A		21,140	U
36	Cyberspace Activities	A		27,632	U
999	Classified Programs			5,535	U

	Total Communications And Electronics Equipment			1,252,532	
	Budget Activity 05: Support Vehicles				

	Administrative Vehicles				
37	Commercial Cargo Vehicles	A		28,913	U
	Tactical Vehicles				
38	Motor Transport Modifications	A		19,234	U

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
39	Joint Light Tactical Vehicle		527 233,439	1642 599,274		1642 599,274	U
40	Family of Tactical Trailers	A	1,668	2,393		2,393	U
			-----	-----	-----	-----	
	Total Support Vehicles		315,431	636,923	44,440	681,363	
Budget Activity 06: Engineer and Other Equipment							

Engineer and Other Equipment							
41	Environmental Control Equip Assort	A	1,405	496		496	U
42	Tactical Fuel Systems	A	1,788	54		54	U
43	Power Equipment Assorted	A	10,280	16,885		16,885	U
44	Amphibious Support Equipment	A	6,230	14,890		14,890	U
45	EOD Systems	A	47,447	47,854	8,000	55,854	U
Materials Handling Equipment							
46	Physical Security Equipment	A	38,462	28,306		28,306	U
General Property							
47	Field Medical Equipment	A		33,513		33,513	U
48	Training Devices	B	72,512	64,040		64,040	U
49	Family of Construction Equipment	A	33,763	59,856		59,856	U
50	Ultra-Light Tactical Vehicle (ULTV)	A	1,266	606		606	U

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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-
39	Joint Light Tactical Vehicle		1398	558,107							U
40	Family of Tactical Trailers	A		2,693							U
	Total Support Vehicles			608,947							
Budget Activity 06: Engineer and Other Equipment											

Engineer and Other Equipment											
41	Environmental Control Equip Assort	A		495							U
42	Tactical Fuel Systems	A		52							U
43	Power Equipment Assorted	A		22,441							U
44	Amphibious Support Equipment	A		7,101							U
45	EOD Systems	A		44,700			3,670		3,670		U
Materials Handling Equipment											
46	Physical Security Equipment	A		15,404							U
General Property											
47	Field Medical Equipment	A		2,898							U
48	Training Devices	B		149,567							U
49	Family of Construction Equipment	A		35,622							U
50	Ultra-Light Tactical Vehicle (ULTV)	A		647							U

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

Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
39	Joint Light Tactical Vehicle		1398	558,107	U
40	Family of Tactical Trailers	A		2,693	U

	Total Support Vehicles			608,947	
Budget Activity 06: Engineer and Other Equipment					

Engineer and Other Equipment					
41	Environmental Control Equip Assort	A		495	U
42	Tactical Fuel Systems	A		52	U
43	Power Equipment Assorted	A		22,441	U
44	Amphibious Support Equipment	A		7,101	U
45	EOD Systems	A		48,370	U
Materials Handling Equipment					
46	Physical Security Equipment	A		15,404	U
General Property					
47	Field Medical Equipment	A		2,898	U
48	Training Devices	B		149,567	U
49	Family of Construction Equipment	A		35,622	U
50	Ultra-Light Tactical Vehicle (ULTV)	A		647	U

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Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
Other Support							
51	Items Less Than \$5 Million	A	8,477	11,608		11,608	U
			-----	-----	-----	-----	
	Total Engineer and Other Equipment		221,630	278,108	8,000	286,108	
Budget Activity 07: Spares and Repair Parts							

Spares and Repair Parts							
52	Spares and Repair Parts	A	29,109	24,397		24,397	U
			-----	-----	-----	-----	
	Total Spares and Repair Parts		29,109	24,397		24,397	
			-----	-----	-----	-----	
	Total Procurement, Marine Corps		2,019,194	2,719,870	58,023	2,777,893	

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Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	FY 2020 Base Cost	FY 2020 OCO for Base Requirements Quantity	FY 2020 OCO for Base Requirements Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	FY 2020 OCO for Direct War and Enduring Costs Cost	FY 2020 Total OCO Quantity	FY 2020 Total OCO Cost	S e c
	Other Support										
	51 Items Less Than \$5 Million	A		10,956							U
	Total Engineer and Other Equipment			289,883				3,670		3,670	
	Budget Activity 07: Spares and Repair Parts										
	Spares and Repair Parts										
	52 Spares and Repair Parts	A		33,470							U
	Total Spares and Repair Parts			33,470							
	Total Procurement, Marine Corps			3,090,449				20,589		20,589	

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Appropriation: 1109N Procurement, Marine Corps

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-
	Other Support				
	51 Items Less Than \$5 Million	A		10,956	U

	Total Engineer and Other Equipment			293,553	
	Budget Activity 07: Spares and Repair Parts				

	Spares and Repair Parts				
	52 Spares and Repair Parts	A		33,470	U

	Total Spares and Repair Parts			33,470	

	Total Procurement, Marine Corps			3,111,038	

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4	02	02	2185	155MM Ltwt Towed Howitzer.....	Volume 1 - 27
5	02	02	2212	Artillery Weapons System.....	Volume 1 - 31
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15	04	09	4652	Modification Kits.....	Volume 1 - 147
16	04	14	4620	Items under \$5 million (Comm & Elec).....	Volume 1 - 151
17	04	14	4640	Air Operations C2 Systems.....	Volume 1 - 169
18	04	15	4650	Radar Systems.....	Volume 1 - 179
19	04	15	4655	Ground/Air Task Oriented Radar (G/ATOR).....	Volume 1 - 183
21	04	16	4616	GCSS-MC.....	Volume 1 - 195
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23	04	16	4747	Intelligence Support Equipment.....	Volume 1 - 209
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31	04	19	4630	Common Computer Resources.....	Volume 1 - 255
32	04	19	4631	Command Post Systems.....	Volume 1 - 269
33	04	19	4633	Radio Systems.....	Volume 1 - 283
34	04	19	4634	Comm Switching & Control Systems.....	Volume 1 - 297
35	04	19	4635	Comm & Elec Infrastructure Supt.....	Volume 1 - 303
36	04	19	4645	Cyberspace Activities.....	Volume 1 - 313

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40	05	02	5097	Family of Tactical Trailers.....	Volume 1 - 359

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46	06	02	6438	Physical Security Equipment.....	Volume 1 - 387
47	06	03	6522	Field Medical Equipment.....	Volume 1 - 391
48	06	03	6532	Training Devices.....	Volume 1 - 397
49	06	03	6544	Family of Construction Equipment.....	Volume 1 - 407
50	06	03	6545	Ultra-Light Tactical Vehicle (ULTV).....	Volume 1 - 417
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Line #	BA	BSA	Line Item Number	Line Item Title	Page
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Artillery Weapons System	2212	5	02	02.....	Volume 1 - 31
Comm & Elec Infrastructure Supt	4635	35	04	19.....	Volume 1 - 303
Comm Switching & Control Systems	4634	34	04	19.....	Volume 1 - 297
Command Post Systems	4631	32	04	19.....	Volume 1 - 269
Commercial Cargo Vehicles	5006	37	05	01.....	Volume 1 - 319
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Common Computer Resources	4630	31	04	19.....	Volume 1 - 255
Cyberspace Activities	4645	36	04	19.....	Volume 1 - 313
Distributed Common Ground System (DCGS-MC)	4767	26	04	16.....	Volume 1 - 239
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Line Item Title	Line Item Number	Line #	BA	BSA	Page
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Family Anti-Armor Weapon Systems (FOAAWS)	3016	10	03	01.....	Volume 1 - 95
Family of Construction Equipment	6544	49	06	03.....	Volume 1 - 407
Family of Tactical Trailers	5097	40	05	02.....	Volume 1 - 359
Field Medical Equipment	6522	47	06	03.....	Volume 1 - 391
Fire Support System	4733	22	04	16.....	Volume 1 - 199
GCSS-MC	4616	21	04	16.....	Volume 1 - 195
Ground Based Air Defense (GBAD)	3006	8	03	01.....	Volume 1 - 73
Ground/Air Task Oriented Radar (G/ATOR)	4655	19	04	15.....	Volume 1 - 183
Guided MLRS Rocket (GMLRS)	3025	12	03	01.....	Volume 1 - 117
Intelligence Support Equipment	4747	23	04	16.....	Volume 1 - 209
Items Less Than \$5 Million	6670	51	06	04.....	Volume 1 - 421
Items under \$5 million (Comm & Elec)	4620	16	04	14.....	Volume 1 - 151
Joint Light Tactical Vehicle	5095	39	05	02.....	Volume 1 - 339
LAV PIP	2038	3	02	01.....	Volume 1 - 17
Modification Kits	2061	7	02	04.....	Volume 1 - 59
Modification Kits	4652	15	04	09.....	Volume 1 - 147
Motor Transport Modifications	5050	38	05	02.....	Volume 1 - 331
Next Generation Enterprise Service	4625	30	04	19.....	Volume 1 - 245
Physical Security Equipment	6438	46	06	02.....	Volume 1 - 387

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Line Item Title	Line Item Number	Line #	BA	BSA	Page
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Radar Systems	4650	18	04	15.....	Volume 1 - 179
Radio Systems	4633	33	04	19.....	Volume 1 - 283
Repair and Test Equipment	4181	14	04	07.....	Volume 1 - 133
Spares and Repair Parts	7000	52	07	01.....	Volume 1 - 429
Tactical Fuel Systems	6277	42	06	01.....	Volume 1 - 367
Training Devices	6532	48	06	03.....	Volume 1 - 397
Ultra-Light Tactical Vehicle (ULTV)	6545	50	06	03.....	Volume 1 - 417
Unmanned Air Systems	4757	25	04	16.....	Volume 1 - 229
Wpns & Cmbt Vehs under \$5 million	2220	6	02	02.....	Volume 1 - 45

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 1: Tracked Combat Vehicles							P-1 Line Item Number / Title: 2021 / AAV7A1 PIP					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M, 0206629M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,067.774	85.362	96.836	39.495	0.000	39.495	94.300	88.779	39.483	40.269	67.889	1,620.187
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,067.774	85.362	96.836	39.495	0.000	39.495	94.300	88.779	39.483	40.269	67.889	1,620.187
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,067.774	85.362	96.836	39.495	0.000	39.495	94.300	88.779	39.483	40.269	67.889	1,620.187
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The AAV7A1 Product Improvement Program (PIP) is comprised of the Assault Amphibious Vehicle (AAV) Modifications Line and the AAV Survivability Upgrade (AAV SU) program. The AAV Modifications Line includes life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through continuous review of sub-systems to maintain system supportability, safety, procurement of replacement systems for obsolescence, and fielding of Engineering Change Proposals (ECP) for capability-based improvements of fleet assets, reduced total ownership cost initiatives, and improved AAV sustainment initiatives. The AAV Modifications Line procures modernized components and subsystems that impact safe and reliable use of AAV such as Electrical Modernization, Intercom Modernization, Tactical Communication Modernization (TCM), technical refresh of servers and laptops for Command-variant (C-Variant), and associated production support for the AAV FOV. The AAV SU is a capability-based upgrade program centered on material upgrades in survivability and force protection while maintaining the required land and water mobility performance. The United States Marine Corps (USMC) decided to terminate the AAV SU program in order to better align to the National Defense Strategy; the remaining AAV SU funding will be utilized for program cancellation, which is expected to take between 12-24 months to complete. Funding to maintain and sustain the legacy AAV fleet will continue herein through the AAV Modifications Line.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	85.041	96.514	39.166	-	39.166	93.965	88.437	39.144	39.923		
NR	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	0.321	0.322	0.329	-	0.329	0.335	0.342	0.339	0.346		
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	85.362	96.836	39.495	-	39.495	94.300	88.779	39.483	40.269		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 1: Tracked Combat Vehicles						P-1 Line Item Number / Title: 2021 / AAV7A1 PIP				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M, 0206629M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / AAV7A1 PIP	P-5a			- / 1,067.774	- / 85.362	- / 96.836	- / 39.495	- / 0.000	- / 39.495
P-40	Total Gross/Weapon System Cost				- / 1,067.774	- / 85.362	- / 96.836	- / 39.495	- / 0.000	- / 39.495
*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: FY2018 Base Appropriation Request: \$85.362M (\$85.041M Active; \$0.321M Reserve). The AAV program procured fleet-wide Vehicle Modifications including Emergency Egress Lighting System (EELS) Power Units and spares, M2 0.50 caliber Machine Gun Conversion Kits, Intercom Modernization procurements for Personnel-variants, Recovery-variant corrosion improvements, hardware/software technical refresh and Cybersecurity for Command-variants, plus related Engineering Change Orders (ECO), Integrated Logistics Support (ILS), Production Engineering Support, Support Equipment, and Technical Publications for the AAV family of vehicles and termination costs for the AAV Survivability Upgrade program. FY2019 Base Appropriation Request: \$96.836M (\$96.514M Active; \$0.322M Reserve). The AAV program will procure fleet-wide Vehicle Modifications including Emergency Egress Lighting System (EELS) Power Units and spares, Recovery-variant corrosion improvements, Intercom Modernization procurements and Remote Weapon Stations (RWS) for Personnel-variants, continued hardware/software technical refresh and Cybersecurity for the Command-variants; plus related Engineering Change Orders (ECO), Integrated Logistics Support (ILS), Production Engineering Support, Support Equipment, and Technical Publications for the AAV family of vehicles and termination costs for the AAV Survivability Upgrade program. FY2020 Base Appropriation Request: \$39.495M (\$39.166M Active; \$0.329M Reserve). The AAV program will procure fleet-wide Vehicle Modifications including Tactical Communication Modernization, Precision Navigation, Remote Weapon Stations (RWS), and continued hardware/software technical refresh for the Command-variants; plus related Engineering Change Orders (ECO), Integrated Logistics Support (ILS), Production Engineering Support, Support Equipment, and Technical Publications for the AAV family of vehicles. The net decrease of \$57.341M between FY2019 and FY2020 is due to the combination of 1) the cancellation of the AAV Survivability Upgrade program and associated termination costs in FY2019 and 2) the increase in support for vehicle modifications to replace obsolete vehicle radios in the AAV Family of Vehicles. OCO: FY2020 OCO Appropriation Request: N/A										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1						P-1 Line Item Number / Title: 2021 / AAV7A1 PIP						Item Number / Title [DODIC]: 1 / AAV7A1 PIP						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				1,067.774		85.362		96.836		39.495		0.000		39.495				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				1,067.774		85.362		96.836		39.495		0.000		39.495				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				1,067.774		85.362		96.836		39.495		0.000		39.495				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Surface Vehicle	-	-	856.947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) Vehicle Modifications ⁽¹⁾	-	-	105.076	-	-	29.154	-	-	13.869	-	-	28.762	-	-	-	-	-	28.762
1.1.3) Reserve Vehicle Modifications	-	-	1.604	-	-	0.321	-	-	0.322	-	-	0.329	-	-	-	-	-	0.329
1.1.4) Survivability Upgrade ⁽¹⁾ ⁽²⁾	2.552	18	45.928	-	-	49.735	-	-	74.756	-	-	-	-	-	-	-	-	-
1.1.5) Engineering Change Orders (ECO)	-	-	4.501	-	-	-	-	-	0.799	-	-	0.789	-	-	-	-	-	0.789
Subtotal: Recurring Cost	-	-	1,014.056	-	-	79.210	-	-	89.746	-	-	29.880	-	-	-	-	-	29.880
Non Recurring Cost																		
1.2.1) Nonrecurring Engineering and Tooling	-	-	7.059	-	-	-	-	-	0.254	-	-	0.254	-	-	-	-	-	0.254
Subtotal: Non Recurring Cost	-	-	7.059	-	-	-	-	-	0.254	-	-	0.254	-	-	-	-	-	0.254
Subtotal: Flyaway Cost	-	-	1,021.115	-	-	79.210	-	-	90.000	-	-	30.134	-	-	-	-	-	30.134
Support Cost																		
2.1) Peculiar Training Equipment & Simulators ⁽³⁾	-	-	1.893	-	-	-	-	-	-	-	-	0.377	-	-	-	-	-	0.377

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1							P-1 Line Item Number / Title: 2021 / AAV7A1 PIP						Item Number / Title [DODIC]: 1 / AAV7A1 PIP					
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
2.2) Integrated Logistics Support ⁽⁴⁾	-	-	5.830	-	-	2.841	-	-	2.852	-	-	2.963	-	-	-	-	-	2.963
2.3) Production Engineering Support ⁽⁵⁾	-	-	28.984	-	-	2.361	-	-	2.929	-	-	4.956	-	-	-	-	-	4.956
2.4) Acceptance Testing	-	-	0.116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5) Support Equipment	-	-	7.506	-	-	0.130	-	-	-	-	-	-	-	-	-	-	-	-
2.6) Pubs & Tech Data	-	-	2.330	-	-	0.820	-	-	1.055	-	-	1.065	-	-	-	-	-	1.065
Subtotal: Support Cost	-	-	46.659	-	-	6.152	-	-	6.836	-	-	9.361	-	-	-	-	-	9.361
Gross/Weapon System Cost	-	-	1,067.774	-	-	85.362	-	-	96.836	-	-	39.495	-	-	0.000	-	-	39.495

^(t) indicates the presence of a P-5a

Footnotes:

- ⁽¹⁾ The increase in Vehicle Modifications from FY2019 to FY2020 (\$14.893) is due to initiation of Tactical Communication Modernization procurements to replace obsolete vehicle radios for the AAV Family of Vehicles. This strategy reflects the Marine Corps' commitment to improving AAV subsystems on a timeline that supports the Department of Navy Amphibious Lift Strategy/Plan to replace AAVs with Amphibious Combat Vehicles (ACVs).
- ⁽²⁾ The decrease in Survivability Upgrade from FY2019 to FY2020 (\$74.756) is due to the USMC decision to terminate the program in order to better align with the National Defense Strategy.
- ⁽³⁾ The increase in Peculiar Training Equipment and simulators between FY2019 and FY2020 (\$0.377) is attributed to the purchase of Computer Based Training (CBT) (WIN 10 OS Updates) and C-variant Software WIN 10 Training Upgrades.
- ⁽⁴⁾ Integrated Logistics Support (ILS) provides for reliability and maintainability engineering, supply support, Government Furnished Equipment (GFE) management, training, technical data/publications support, and packaging, handling, storage, and transportation. The increase in Integrated Logistics Support (ILS) from FY2019 to FY2020 (\$0.111) is attributed to the normal rate of inflation.
- ⁽⁵⁾ The increase in Production Engineering Support from FY2019 to FY2020 (\$2.027) is attributed to program office support requirements transitioning from development to the procurement appropriation.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1				P-1 Line Item Number / Title: 2021 / AAV7A1 PIP				Item Number / Title [DODIC]: 1 / AAV7A1 PIP				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.4) Survivability Upgrade		2017 ⁽⁶⁾	SAIC / Charleston, SC	C / FFP	MCSC	Aug 2017	Oct 2018	18	2.551	Y		

Footnotes:
⁽⁶⁾ AAV Survivability Upgrade Low Rate Initial Production award (Lot 1, FY2017) is a pre-negotiated firm-fixed priced option on current EMD contract.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 1: Tracked Combat Vehicles							P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1					
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: 472												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	26	30	56	-	56	92	-	-	-	-	204
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	156.693	167.478	317.935	0.000	317.935	493.300	0.000	0.000	0.000	-	1,135.406
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	156.693	167.478	317.935	0.000	317.935	493.300	0.000	0.000	0.000	-	1,135.406
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	156.693	167.478	317.935	0.000	317.935	493.300	0.000	0.000	0.000	-	1,135.406
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	5.569	6.145	13.954	-	13.954	13.634	-	-	-	-	39.302
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	5,560K	4,779K	5,086K	-	5,086K	4,949K	-	-	-	-	5,040K
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	6,027K	5,583K	5,677K	-	5,677K	5,362K	-	-	-	-	5,566K

Description:

The Amphibious Combat Vehicle (ACV) will be a partial and complementary replacement for the legacy Assault Amphibious Vehicle (AAV) in the Assault Amphibious (AA) battalions within the Marine Divisions. ACV-equipped AA companies will provide protected mobility and general support lift to elements of Marine Infantry battalions. The ACV, an advanced generation, eight-wheeled armored personnel carrier, will mitigate current and projected capability gaps by providing improved lethality against dismounted enemy troops, more effective land and water tactical mobility, and increased force protection and survivability from blasts, fragmentation, and kinetic energy threats. ACV is structured to be executed in multiple increments, with the first increment designed to provide an initial operational capability of personnel carriers. Subsequent increments are planned to procure additional personnel carriers and to develop and procure additional Mission Role Variants (MRVs), such as command and control and tactical recovery capabilities.

The ACV phased approach allows the Marine Corps to procure a modernized assault amphibian to serve as a complimentary platform for forcible entry operations. The ACV Increment 1.1 variant will deliver combat ready Marines from ship-to-shore connector craft in order to mass forces at littoral penetration points and continue to maneuver onward to inland objectives. The Approved Acquisition Objective (AAO) is 204 vehicles (ACV 1.1).

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 1: Tracked Combat Vehicles						P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1				
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: 472										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Amphibious Combat Vehicle	P-5a, P-21			- / 0.000	26 / 156.693	30 / 167.478	56 / 317.935	- / 0.000	56 / 317.935
P-40	Total Gross/Weapon System Cost				- / 0.000	26 / 156.693	30 / 167.478	56 / 317.935	- / 0.000	56 / 317.935
*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 Appropriation Request: \$156.693M Funds used for Low Rate Initial Production (LRIP) Lot 1 of 26 vehicles, plus procurement of related items such as production support, systems engineering/program management, Engineering Change Orders (ECOs), Government Furnished Equipment (GFE), and integrated logistics support. FY 2019 Baseline Appropriation Request: \$167.478M Funds used for LRIP Lot 2 of 30 vehicles, plus procurement of related items such as production support, systems engineering/program management, Engineering Change Orders (ECOs), Government Furnished Equipment (GFE), and integrated logistics support. FY20 Baseline Appropriation Request: \$317.935M Funds will be used for FRP (Lot 3) of 56 vehicles, plus procurement of related items such as production support, systems engineering/program management, Engineering Change Orders (ECOs), Government Furnished Equipment (GFE), and integrated logistics support. Net increase between FY19 and FY 20 of \$150.457M primarily due to the procurement and support of 26 additional vehicles in FY20.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1							P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1							Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			26			30			56			-			56		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000			156.693			167.478			317.935			0.000			317.935		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000			156.693			167.478			317.935			0.000			317.935		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				0.000			156.693			167.478			317.935			0.000			317.935		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			5.569			6.145			13.954			-			13.954		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			6,027K			5,583K			5,677K			-			5,677K		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total				
		Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)		
Flyaway Cost																					
Recurring Cost																					
1.1.1) Surface Vehicle ⁽¹⁾ (1)		-	-	-	3,770K	26	98.023	3,629K	30	108.882	3,471K	56	194.364	-	-	-	3,471K	56	194.364		
1.1.2) Government Furnished Equipment ⁽²⁾		-	-	-	-	-	11.472	-	-	13.302	-	-	26.303	-	-	-	-	-	26.303		
1.1.3) System Engineering Program Management ⁽³⁾		-	-	-	-	-	29.951	-	-	15.369	-	-	34.241	-	-	-	-	-	34.241		
Subtotal: Recurring Cost		-	-	-	-	-	139.446	-	-	137.553	-	-	254.908	-	-	-	-	-	254.908		
Subtotal: Flyaway Cost		-	-	-	-	-	139.446	-	-	137.553	-	-	254.908	-	-	-	-	-	254.908		
Flyaway - Cost																					
Non Recurring Cost																					
2.1.1) Vehicle Modifications ⁽⁴⁾		-	-	-	-	-	-	-	-	-	-	-	15.000	-	-	-	-	-	15.000		
2.1.2) Engineering Change Order ⁽⁵⁾		-	-	-	-	-	2.342	-	-	3.571	-	-	12.470	-	-	-	-	-	12.470		
2.1.3) Nonrecurring Engineering & Industrial Tooling ⁽⁶⁾		-	-	-	-	-	2.783	-	-	2.259	-	-	2.452	-	-	-	-	-	2.452		
Subtotal: Non Recurring Cost		-	-	-	-	-	5.125	-	-	5.830	-	-	29.922	-	-	-	-	-	29.922		
Subtotal: Flyaway - Cost		-	-	-	-	-	5.125	-	-	5.830	-	-	29.922	-	-	-	-	-	29.922		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1							P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1						Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle					
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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																		
3.1) Production Support	-	-	-	-	-	1.658	-	-	12.284	-	-	12.286	-	-	-	-	-	12.286
3.2) Acceptance Testing ⁽⁷⁾	-	-	-	-	-	1.448	-	-	1.573	-	-	5.628	-	-	-	-	-	5.628
3.3) Peculiar Training Equipment and Simulators ⁽⁸⁾	-	-	-	-	-	-	-	-	1.560	-	-	2.550	-	-	-	-	-	2.550
3.4) Pubs & Tech Data ⁽⁹⁾	-	-	-	-	-	0.214	-	-	1.640	-	-	2.119	-	-	-	-	-	2.119
3.5) Support Equipment	-	-	-	-	-	0.399	-	-	0.540	-	-	0.551	-	-	-	-	-	0.551
3.6) Integrated Logistics Support (ILS) ⁽¹⁰⁾	-	-	-	-	-	8.403	-	-	6.498	-	-	9.971	-	-	-	-	-	9.971
Subtotal: Support Cost	-	-	-	-	-	12.122	-	-	24.095	-	-	33.105	-	-	-	-	-	33.105
Gross/Weapon System Cost	-	-	0.000	6,027K	26	156.693	5,583K	30	167.478	5,677K	56	317.935	-	-	0.000	5,677K	56	317.935

(t) indicates the presence of a P-5a

Footnotes:

- (1) The increase in Surface Vehicle between FY 2019 and FY 2020 (\$85.482) is attributed to the increase in FY 2020 for an additional twenty-six (26) vehicles. Unit costs reflect the MS C and production contract.
- (2) GFE procurement includes communication suites, Driver's Vision Enhancer, exportable power, Joint Battle Command-Platform (JBC-P), and the Amphibious Remote Weapon Stations (ARWS). The increase in GFE between FY 2019 and FY 2020 (\$13.001) is attributed to the increase of twenty-six (26) vehicles in FY 2020.
- (3) Systems Engineering/Program Management (SE/PM) is a recurring charge from the Prime Contractor. Recurring systems engineering includes the costs of maintainability/reliability engineering, maintenance engineering, value engineering, production engineering costs associated with the system, periodic system redesign/evaluation, and analysis of test results during production. Recurring program management includes the overall planning, direction, and control of the definition, development, and production of the system/program, including the functions of business management. Net increase between FY 2019 and FY2020 of (\$18.872) primarily due to the procurement of twenty-six (26) additional vehicles in FY 2020. The cost is based on the contract cost in accordance with the awarded fixed price incentive contract. All terms were negotiated and accepted by the Government.
- (4) The increase in vehicle modifications between FY 2019 and FY 2020 (\$15.000) is attributed to the reset of Low Rate Initial Production (LRIP) Test vehicles which are utilized during conduct of Initial Operational Test & Evaluation (IOT&E). The cost is based on the contract cost in accordance with the awarded fixed price incentive contract. All terms were negotiated and accepted by the Government.
- (5) Engineering Change Orders (ECOs) address fact of life changes to vehicle configuration such as performance, safety, or reliability. The increase in ECO between FY 2019 and FY 2020 (\$8.899) is attributed to the increase of twenty-six (26) vehicles in FY 2020 as well as an increase in the number of ECOs required based on fact-of-life changes and lessons learned during testing and fielding. The estimated cost is based on the contract terms in accordance with the awarded fixed price incentive contract.
- (6) The increase in Nonrecurring Engineering and Industrial Tooling between FY 2019 and FY 2020 (\$0.193) reflects increased nonrecurring engineering and tooling efforts associated with the addition of 26 vehicles.

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1	P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1	Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁷⁾ Acceptance Testing provides effort/materials associated with tests that are conducted to determine if the requirements and the specifications of the vehicle and/or contract are met. It is funded in the fiscal year in which the item is procured as part of the full funding policy. The increase between FY 2019 and FY 2020 (\$4.055) is attributed to the procurement of twenty-six (26) additional vehicles in FY 2020. The cost is based on the contract cost in accordance with the awarded fixed price incentive contract. All terms were negotiated and accepted by the Government. ⁽⁸⁾ Peculiar Training Equipment and Simulators represents the procurement of operator and maintenance trainers which is essential to conducting training prior to system fielding. The increase between FY2019 and FY2020 (\$0.990) is attributed to procurement of Training Systems in FY2020. ⁽⁹⁾ The increase in Pubs and Tech Data between FY 2019 and FY 2020 (\$0.479) is attributed to additional projected maintenance and updates of technical manuals. ⁽¹⁰⁾ ILS includes Logistics Management Information (LMI) procurement and platform support products necessary for the planning and preparation to support the fielded system until organic support capability established. This effort will enable a journeyman level repair technician(s) to disassemble, clean, inspect, overhaul/rebuild, repair/refurbish, reassemble and test, at a Government Depot, all secondary repairables identified by the Contractor during its Supportability Analyses and Level of Repair Analyses and documented in the LMI data tracking system. The cost is based on the contract cost in accordance with the awarded fixed price incentive contract. All terms were negotiated and accepted by the Government. The increase between FY 2019 and FY 2020 (\$3.473) is attributed to the initial effort for Developing Depot Data and Depot Support Products.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1				P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1				Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Surface Vehicle ^(†)		2018	BAE Systems / York, PA	C / FPIF	MCSC	Jun 2018	Jul 2019	26	3,770K	Y		Dec 2017
1.1.1) Surface Vehicle ^(†)		2019	BAE Systems / York, PA	C / FPIF	MCSC	Dec 2018	Feb 2020	30	3,629K	Y		Dec 2017
1.1.1) Surface Vehicle ^(†)		2020	BAE Systems / York, PA	C / FPIF	MCSC	Jun 2020	Jul 2021	56	3,471K	Y		Dec 2017

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																																			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1							P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1													Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle																																			
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2018										Fiscal Year 2019													BALANCE																									
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019																																						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P																								
1.1.1) Surface Vehicle ⁽¹⁾																																																							
	1	2018	NAVY	26	0	26											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	5	14																		
	1	2019	NAVY	30	0	30											A -										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30												
	1	2020	NAVY	56	0	56																																																	56
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																									

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1										P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1										Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2020										Fiscal Year 2021													BALANCE			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020										Calendar Year 2021																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P		
1.1.1) Surface Vehicle ⁽¹⁾																																	
	1	2018	NAVY	26	12	14	6	4	2	2																							0
	1	2019	NAVY	30	0	30	-	-	-	-	2	2	2	2	2	2	3	3	3	3	3											0	
	1	2020	NAVY	56	0	56								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	48
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1										P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1										Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle											
Cost Elements (Units in Each)							Fiscal Year 2022										Fiscal Year 2023										BALANCE				
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022										Calendar Year 2023														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY		JUN	JUL	AUG	SEP
1.1.1) Surface Vehicle ⁽¹⁾																															
	1	2018	NAVY	26	26	0																						0			
	1	2019	NAVY	30	30	0																						0			
	1	2020	NAVY	56	8	48	5	5	5	5	5	5	6	6	6															0	
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1				P-1 Line Item Number / Title: 2025 / Amphibious Combat Vehicle 1.1					Item Number / Title [DODIC]: 1 / Amphibious Combat Vehicle			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	BAE Systems - York, PA	26	56	92	0	9	11	20	0	4	7	11

"A" in the Delivery Schedule indicates the Contract Award Date.

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

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 1: Tracked Combat Vehicles							P-1 Line Item Number / Title: 2038 / LAV PIP					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,772.586	7.322	36.652	60.734	0.000	60.734	67.581	58.125	88.367	81.500	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,772.586	7.322	36.652	60.734	0.000	60.734	67.581	58.125	88.367	81.500	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,772.586	7.322	36.652	60.734	0.000	60.734	67.581	58.125	88.367	81.500	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	5.735	5.883	-	5.883	6.042	5.812	11.081	11.409	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The LAV Anti-Tank Modernization (LAV-ATM) Program modernized the legacy turret and Tube-launched, Optically-tracked, Wire-guided (TOW) system in order to sustain the capability, improve readiness, ensure a high degree of commonality with USMC and U.S. Army systems, and enable the Light Armored Reconnaissance (LAR) Battalion to employ the full range of current and emerging TOW munitions. The program countered two converging obsolescence issues on the LAV-ATM platform: (1) the M901 Emerson turret is no longer in production and has been retired from the U.S. Army inventory, and (2) the M2203A3 TOW system is being replaced by the M41 SABER system in the USMC infantry and tank battalions leaving the LAR Battalion as the only unit using the legacy TOW system.

The LAV Modification & Sustainment program funds important vehicle modifications, support equipment and tools and other projects that increase LAV reliability and readiness while simultaneously reducing operations and support costs. The LAV Modification and Sustainment Team is a multi-disciplinary integrated project team that employs subject matter experts in engineering, logistics, contracting and financial management to manage modification projects.

The LAV Reset Program is an ACAT IV(M) program. The Reset program will address the Family of Light Armored Vehicles (FOLAV) automotive system obsolescence and reduced performance due to increased Gross Vehicle Weight (GVW). The Reset Program will improve fleet reliability and availability by addressing the three sub-systems (power pack, driveline, and steering) that specifically account for 95 percent of total system downtime. The program also fields a modern driver's instrument panel and LAV-25 Slip Ring.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 1: Tracked Combat Vehicles						P-1 Line Item Number / Title: 2038 / LAV PIP				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	LAV PIP	P-5a, P-21			- / 1,772.586	- / 7.322	- / 36.652	- / 60.734	- / -	- / 60.734
P-40	Total Gross/Weapon System Cost				- / 1,772.586	- / 7.322	- / 36.652	- / 60.734	- / 0.000	- / 60.734
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Baseline Appropriation: \$7.322M LAV Anti-Tank Modernization (ATM): \$5.706M funded the fielding of the Anti-Tank Weapon Systems (ATWS) and supporting efforts such as all required logistics support, installation, and required government and contractor support. LAV Modification and Sustainment (MOD): \$1.616M funded the safety related pneumatic valve and locking pin on the drivers seat safety modification. FY 2019 Baseline Appropriation: \$36.652M LAV Reset: \$36.652M funds the procurement and fielding of 60 Reset kits and supporting efforts such as logistics support, special tools & support equipment for depots, and required government and contractor support. FY 2020 Baseline Appropriation: \$60.734M The FY 2020 funding request for BLI 2038 was reduced by \$4.262M to account for the availability of prior year execution balances. LAV Reset: \$51.686M funds the procurement and fielding of 60 Reset kits and supporting efforts such as all required logistics support, special tools and support equipment required for fielding, EMD vehicle refurbishment, instructor and key personnel new equipment training and required government and contractor support. The \$15.034M increase between FY19 and FY20 in the LAV Reset Program is primarily due to fielding, logistics, and parts refurbishment costs. The primary driver of the increase is the procurement of tool kits specific to the Reset kits for all three LAR battalions. Additional drivers of the cost increase include the procurement and provisioning of vehicle technical manuals, including new technical manuals for the vehicle engine and transmission, and the refurbishment of parts to be incorporated into the Reset Kits during installation at the maintenance depot. LAV Modification and Sustainment (MOD): \$9.048M funds the procurement and fielding of 237 new intercom systems that resolve current operational deficiencies and will interface with the USMC tactical communication modernization (TCM) compliant radios. The TCM requirement is mandated by the National Security Administration (NSA) and must be achieved by 2024. The \$9.048M increase between FY19 and FY20 in the LAV Modification and Sustainment (MOD) Program is due to the first time procurement of a replacement intercom system and associated engineering support. The FY20 request for engineering support directly supports a new effort (procurement of an intercom system) and is not related to the driver's seat safety modification kits.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1							P-1 Line Item Number / Title: 2038 / LAV PIP								Aggregated Items Title: LAV PIP					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) LAV ANTI-TANK MODERNIZATION																				
1.1) Systems Eng/ Prog Mgmt(Reserves)	A		-	-	0.955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) Hardware-ATWS Kits(Reserves) ^(†)	A		1,502K	24	36.045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) Training Devices	A		-	-	6.466	-	-	3.160	-	-	-	-	-	-	-	-	-	-	-	-
1.4) Refurbishment/ Installations ⁽¹⁾	A		-	-	9.670	-	-	2.208	-	-	-	-	-	-	-	-	-	-	-	-
1.5) New Equipment Training	A		-	-	1.666	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Support Equipment	A		-	-	7.398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7) ECO	A		-	-	2.029	-	-	0.090	-	-	-	-	-	-	-	-	-	-	-	-
1.8) PVT/FAT	A		-	-	3.745	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.9) Hardware-ATWS Systems ^(†)	A		1,563K	78	121.945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.10) Systems Eng/ Program Mgmt Support	A		-	-	4.498	-	-	0.150	-	-	-	-	-	-	-	-	-	-	-	-
1.11) ILS	A		-	-	4.626	-	-	0.098	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) LAV ANTI-TANK MODERNIZATION			-	-	199.043	-	-	5.706	-	-	-	-	-	-	-	-	-	-	-	-
2) LAV Reset																				
2.1) Training Devices	A		-	-	-	-	-	-	-	-	1.848	-	-	2.196	-	-	-	-	-	2.196
2.2) Special Tools & Support Equipment ⁽²⁾	A		-	-	-	-	-	-	-	-	1.345	-	-	10.681	-	-	-	-	-	10.681
2.3) New Equipment Training	A		-	-	-	-	-	-	-	-	-	-	-	1.167	-	-	-	-	-	1.167
2.4) Reset Kits ^{(3)(†)}	A		-	-	-	-	-	-	452,181.00	60	27.131	460,548.70	60	27.633	-	-	-	460,548.70	60	27.633
2.5) ILS ⁽⁴⁾	A		-	-	-	-	-	-	-	-	1.711	-	-	2.950	-	-	-	-	-	2.950
2.6) Refurb Test Vehicles	A		-	-	-	-	-	-	-	-	0.988	-	-	1.619	-	-	-	-	-	1.619
2.7) Refurb. Differentials ⁽⁵⁾	A		-	-	-	-	-	-	-	-	1.530	-	-	3.221	-	-	-	-	-	3.221
2.8) Systems Eng/ Program Mgmt Support	A		-	-	-	-	-	-	-	-	2.099	-	-	2.219	-	-	-	-	-	2.219
Subtotal: 2) LAV Reset			-	-	0.000	-	-	-	-	-	36.652	-	-	51.686	-	-	-	-	-	51.686
3) Prior Years Cumulative Funding																				
3.1) Prior Years Cumulative Funding	A		-	-	1,573.543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1								P-1 Line Item Number / Title: 2038 / LAV PIP							Aggregated Items Title: LAV PIP				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 3) Prior Years Cumulative Funding			-	-	1,573.543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) LAV Modification and Sustainment																				
4.1) M & S Kits (DSSM) ^{(6)(†)}	A		-	-	-	2,070.06	749	1.550	-	-	-	-	-	-	-	-	-	-	-	-
4.2) Systems Eng/Program Mgmt Support ⁽⁷⁾	A		-	-	-	-	-	0.066	-	-	-	-	-	1.510	-	-	-	-	-	1.510
4.3) ILS	A		-	-	-	-	-	-	-	-	-	-	-	0.207	-	-	-	-	-	0.207
4.4) M&S Kits (Intercom) ^{(8)(†)}	A		-	-	-	-	-	-	-	-	-	28,941.18	237	6.859	-	-	-	28,941.18	237	6.859
4.5) Installations	A		-	-	-	-	-	-	-	-	-	-	-	0.472	-	-	-	-	-	0.472
Subtotal: 4) LAV Modification and Sustainment			-	-	0.000	-	-	1.616	-	-	-	-	-	9.048	-	-	-	-	-	9.048
Total			-	-	1,772.586	-	-	7.322	-	-	36.652	-	-	60.734	-	-	-	-	-	60.734

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

(†) indicates the presence of a P-5a

Footnotes:

(1) This funding supports the installation of the ATWS kits at the depots (Albany and Barstow) as special project lines.

(2) Special Tools and Support Equipment: FY19 is for production tooling for the depots and FY20 is for the procurement of special tools for fielding. All three LAR battalions require specialized tool sets that are specific to maintaining the Reset Kit components.

(3) The unit cost increase from FY19 to FY20 is due to inflation. Unit costs FY21-24 change as a result of the variant mix. There are 7 LAV variants and certain variants cost more than others.

(4) FY19 is for development of the LAV C2 variant technical publications. FY20 funding supports the completion of the LAV C2 variant technical publications and associated validation/verification. The FY20 increase is due to the development of Engine/Transmission/Specials Tools technical publications and validation/verification.

(5) The FY20 increase is due to an increase in the number of differentials (Reset Kit part) being refurbished. Instead of buying new differentials from the contractor, the program is saving money by refurbishing differentials from US Army Stryker and incorporating them onto the LAV.

(6) Drivers Seat Safety Modification

(7) The FY20 increase for engineering support (Cost Element 4.2) directly supports a new effort (procurement of an intercom system) and is not related to the driver's seat safety modification kits.

(8) Intercom System that will interface with the TCM radios.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1			P-1 Line Item Number / Title: 2038 / LAV PIP						Aggregated Items: LAV PIP			
Item Number / Title [DODIC]	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) LAV ANTI-TANK MODERNIZATION												
1.2) Hardware-ATWS Kits(Reserves) ^(†)		2016 ⁽⁹⁾	Raytheon / McKinney, TX	C / FFP	TACOM, Warren, MI	Jul 2016	Nov 2018	24	1,502K	Y		
1.9) Hardware-ATWS Systems ^(†)		2015	Raytheon / McKinney, TX	C / FFP	TACOM, Warren, MI	Jun 2015	May 2017	44	1,607K	Y		Mar 2011
1.9) Hardware-ATWS Systems ^(†)		2016	Raytheon / McKinney, TX	C / FFP	TACOM, Warren, MI	Dec 2015	Apr 2018	27	1,491K	Y		Mar 2011
1.9) Hardware-ATWS Systems ^(†)		2017	Raytheon / McKinney, TX	C / FFP	TACOM, Warren, MI	Nov 2016	Oct 2018	4	1,505K	Y		Mar 2011
2) LAV Reset												
2.4) Reset Kits ^{(3)(†)}		2019	GDLS / London, Ontario Canada	C / FFP	TACOM, Warren, MI	Jan 2019	Oct 2019	60	452,181.00	Y		Aug 2018
2.4) Reset Kits ^{(3)(†)}		2020 ⁽¹⁰⁾	GDLS / London, Ontario Canada	C / FFP	TACOM, Warren, MI	Oct 2019	Oct 2020	60	460,548.70	Y		Aug 2018
4) LAV Modification and Sustainment												
4.1) M & S Kits (DSSM) ^{(6)(†)}		2018	Rose-A- Lee Technologies / Sterling Heights, MI	C / FFP	TACOM, Warren, MI	Jun 2018	Sep 2018	749	2,070.06	N	Aug 2017	Aug 2017
4.4) M&S Kits (Intercom) ^{(8)(†)}		2020	TBD / TBD	C / TBD	TBD	Dec 2019	Jun 2020	237	28,941.18	N	Aug 2019	Aug 2019

^(†) indicates the presence of a P-21

Footnotes:

⁽⁹⁾ Option 2 awarded Jul 2016 (4) and Option 3 award Aug 2016 (20)

⁽¹⁰⁾ The increase between initial and reorder lead times increases from FY19 to FY20 to preserve the delivery schedule. The maintenance depot cannot induct FY20-funded kits until the FY19 deliveries are complete.

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1										P-1 Line Item Number / Title: 2038 / LAV PIP													Aggregated Items: LAV PIP									
Items <i>(Units in Each)</i>							Fiscal Year 2015										Fiscal Year 2016													BALANCE		
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015										Calendar Year 2016															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP	
1) LAV ANTI-TANK MODERNIZATION																																
1.2) Hardware-ATWS Kits(Reserves)																																
	1	2016	NAVY	24	0	24																			A -	-	-	24				
1.9) Hardware-ATWS Systems																																
Prior Years Deliveries: 3																																
	2	2015	NAVY	44 ⁽¹¹⁾	0	44											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	44	
	2	2016	NAVY	27	0	27														A -	-	-	-	-	-	-	-	-	-	-	-	27
	2	2017	NAVY	4	0	4																						4				
2) LAV Reset																																
2.4) Reset Kits ⁽³⁾																																
	3	2019	NAVY	60	0	60																						60				
	3	2020	NAVY	60 ⁽¹²⁾	0	60																						60				
4) LAV Modification and Sustainment																																
4.1) M & S Kits (DSSM) ⁽⁶⁾																																
	4	2018	NAVY	749	0	749																						749				
4.4) M&S Kits (Intercom) ⁽⁸⁾																																
	5	2020	NAVY	237	0	237	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	237	

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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1										P-1 Line Item Number / Title: 2038 / LAV PIP														Aggregated Items: LAV PIP											
Items <i>(Units in Each)</i>							Fiscal Year 2017														Fiscal Year 2018														BALANCE
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017														Calendar Year 2018														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
1) LAV ANTI-TANK MODERNIZATION																																			
1.2) Hardware-ATWS Kits(Reserves)																																			
	1	2016	NAVY	24	0	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24					
1.9) Hardware-ATWS Systems																																			
Prior Years Deliveries: 3																																			
	2	2015	NAVY	44 ⁽¹¹⁾	0	44	-	-	-	-	-	-	-	1	3	4	4	4	4	4	4	4	5	5	2						0				
	2	2016	NAVY	27	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	5	5	5	5	1					
	2	2017	NAVY	4	0	4		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4					
2) LAV Reset																																			
2.4) Reset Kits ⁽³⁾																																			
	3	2019	NAVY	60	0	60																								60					
	3	2020	NAVY	60 ⁽¹²⁾	0	60																								60					
4) LAV Modification and Sustainment																																			
4.1) M & S Kits (DSSM) ⁽⁶⁾																																			
	4	2018	NAVY	749	0	749																							A -	-	-	250	499		
4.4) M&S Kits (Intercom) ⁽⁸⁾																																			
	5	2020	NAVY	237	0	237																								237					
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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LI 2038 - LAV PIP
Navy

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019										
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1										P-1 Line Item Number / Title: 2038 / LAV PIP													Aggregated Items: LAV PIP										
Items (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE		
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1) LAV ANTI-TANK MODERNIZATION																																	
1.2) Hardware-ATWS Kits(Reserves)																																	
	1	2016	NAVY	24	24	0																											0
1.9) Hardware-ATWS Systems																																	
Prior Years Deliveries: 3																																	
	2	2015	NAVY	44 ⁽¹¹⁾	44	0																											0
	2	2016	NAVY	27	27	0																											0
	2	2017	NAVY	4	4	0																											0
2) LAV Reset																																	
2.4) Reset Kits ⁽³⁾																																	
	3	2019	NAVY	60	60	0																											0
	3	2020	NAVY	60 ⁽¹²⁾	0	60	5	5	5	5	5	5	5	5	5	5	5																0
4) LAV Modification and Sustainment																																	
4.1) M & S Kits (DSSM) ⁽⁶⁾																																	
	4	2018	NAVY	749	749	0																											0
4.4) M&S Kits (Intercom) ⁽⁸⁾																																	
	5	2020	NAVY	237	80	157	20	20	20	20	20	20	17																				0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			

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Exhibit P-21, Production Schedule: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 1		P-1 Line Item Number / Title: 2038 / LAV PIP			Aggregated Items: LAV PIP

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Raytheon - McKinney, TX	60	60	84	0	8	19	27	0	1	19	20
2	Raytheon - McKinney, TX	60	60	84	0	8	19	27	0	1	19	20
3	GDLS - London, Ontario Canada	30	60	120	0	0	9	9	0	0	12	12
4	Rose-A- Lee Technologies - Sterling Heights, MI	360	720	1,080	0	8	3	11	0	0	0	0
5	TBD - TBD			TBD	0	2	6	8	0	2	6	8

"A" in the Delivery Schedule indicates the Contract Award Date.

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

Footnotes:

⁽¹¹⁾ Delivery schedule is based on contract mod signed Jun 2017.

⁽¹²⁾ The increase between initial and reorder lead times between FY19 to FY20 is required to preserve the delivery schedule. The maintenance depot cannot induct FY20-funded kits until the FY19 deliveries are complete.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons							P-1 Line Item Number / Title: 2185 / 155MM LtwT Towed Howitzer					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,346.579	20.259	37.158	25.065	0.000	25.065	0.072	0.074	2.075	2.116	-	1,433.398
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,346.579	20.259	37.158	25.065	0.000	25.065	0.072	0.074	2.075	2.116	-	1,433.398
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,346.579	20.259	37.158	25.065	0.000	25.065	0.072	0.074	2.075	2.116	-	1,433.398
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: LW155 (also known as the M777A2 howitzer) provides all weather, day/night direct, reinforcing, and general support fires to maneuver forces as well as direct support artillery. It is a joint program between the Marine Corps and Army, which is additionally supporting various foreign military purchases of the weapon system. The LW155 was first fielded by the Marine Corps in April 2005 and completed fielding in April 2013. The Army has fielded the system to its Stryker Brigades and Fires Brigades and completed fielding to its Infantry Brigades in September 2018. The LW155 is being significantly utilized in the Middle East in support of Operation Inherent Resolve. This budget line supports system updates to maintain and increase performance and lethality. M777A2 is the prominent weapon of the Marine indirect fires triad and currently the only cannon in the Service. Modernization efforts to include extended range will keep the M777 relevant to the concept of operations (distributed units operating with increased dispersion) envisioned in the Marine Operating Concept.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	20.250	37.152	25.059	-	25.059	0.066	0.068	2.069	2.110		
NR	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	0.009	0.006	0.006	-	0.006	0.006	0.006	0.006	0.006	0.006	
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	20.259	37.158	25.065	-	25.065	0.072	0.074	2.075	2.116		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons						P-1 Line Item Number / Title: 2185 / 155MM LtwT Towed Howitzer				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / 155MM LtwT Towed Howitzer - Active				- / 1,346.579	- / 20.259	- / 37.158	- / 25.065	- / 0.000	- / 25.065
P-40	Total Gross/Weapon System Cost				- / 1,346.579	- / 20.259	- / 37.158	- / 25.065	- / 0.000	- / 25.065
*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 Base Appropriation Request: \$20.259M (\$20.250M Active; \$0.009M Reserve) FY 2018 funding provides funding for various modification and sustainment efforts such as Digital Fire Control System (DFCS) component refresh, integration of upgraded components, and interoperability issues including M-Code satellite signal in support of the M777A2 program. Specifically, FY18 funding continued installations of modification kits such as the Improved Power Conditioning Control Module (I-PCCM), Electronic Thermal Warning Device (ETWD), Mission Computer (MSC-R), Chief of Section Display (CSD-R), Improved Platform Integration Kit (IPIK) and Primer Feed Mechanism (PFM) Components. The PFM and ETWD procurements are critical efforts to address current field restrictions for firing the Modular Artillery Charge System (MACS) at higher elevations. Also, funded is the procurement of Chrome Cannon Tubes for the M777A2 howitzer. FY 2019 Base Appropriation Request: \$37.158M (\$37.152M Active; \$0.006M Reserve) FY 2019 funding continued the installation of modification kits; such as the Improved Power Conditioning Control Module (I-PCCM), Mission Computer (MSC-R), and Chief of Section Display (CSD-R) (\$211M). Additionally, funding supports the procurement of Chrome Cannon tubes (\$3.710M); Software Defined Radios, cables, and brackets (\$20.747M); and Inertial Navigation Unit (INU) Recapitalization (\$12.490M). Software Defined Radio modification enables more secure radio communication and facilitates new encryption protocol interoperability between artillery and supported forces. The new radio will provide the ability to perform voice and data functions over the same radio which increases operational flexibility for firing units. The INU recapitalization maintains the howitzers ability to navigate and aim accurately to safely provide fire support and extends the useful life of the system. The INU provides the M777A2, in conjunction with the Vehicle Motion Sensor (VMS), the capability to navigate when GPS is not available. Net funding increase of \$26.899M from FY18 to FY19 reflects the increase of procurement quantities of Software Defined Radios and commencement of INU recapitalization for the fleet as well as reduced quantities of Chrome Cannon tubes. FY 2020 Base Appropriation Request: \$25.065M (\$25.059M Active; \$0.006M Reserve) FY 2020 funding provides for the procurement of the final lot of chrome cannon tubes (Qty 165) that will outfit the entire USMC howitzer fleet (\$24.993M). Chrome Cannon Tubes increase safety, accuracy, and longevity of the howitzer by eliminating propellant residue inside the cannon tubes. Propellant residue causes spiral wear, which reduces the muzzle velocity of the howitzer, and fuze malfunctions of projectiles. Reduced muzzle velocity leads to projectiles impacting short of their intended targets. Also funded is the procurement of software defined radios, cables and brackets, and integration onto the M777A2 howitzer. FY20 funding will continue to support installation of previously procured hardware modification kits (\$0.072M). Net funding decrease of \$12.093M from FY19 to FY20 reflects the completion of the INU recapitalization procurement and Software Defined Radio kits for the USMC fleet.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2						P-1 Line Item Number / Title: 2185 / 155MM Ltwt Towed Howitzer						Item Number / Title [DODIC]: 1 / 155MM Ltwt Towed Howitzer - Active						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-		-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				1,346.579		20.259		37.158		25.065		0.000		25.065				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				1,346.579		20.259		37.158		25.065		0.000		25.065				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				1,346.579		20.259		37.158		25.065		0.000		25.065				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-		-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-		-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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 - Active Cost																		
1.1) Hardware/electronic obsolescence and improvement ECP Retrofits	-	-	14.652	-	-	0.467	-	-	0.205	-	-	0.066	-	-	-	-	-	0.066
1.2) Software Defined Radio ⁽¹⁾	-	-	-	-	-	5.135	-	-	20.747	-	-	-	-	-	-	-	-	-
1.3) Inertial Navigation Unit Recapitalization ⁽²⁾	-	-	-	-	-	-	-	-	12.490	-	-	-	-	-	-	-	-	-
1.4) Chrome Cannon Tubes ⁽³⁾	-	-	14.000	-	-	14.648	-	-	3.710	-	-	24.993	-	-	-	-	-	24.993
Subtotal: Support - Active Cost	-	-	28.652	-	-	20.250	-	-	37.152	-	-	25.059	-	-	-	-	-	25.059
Support - Reserves - 155MM Ltwt Towed Howitzer Cost																		
2.1) Systems Engineering/Program Management	-	-	0.577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Hardware/electronic obsolescence and improvement ECP retrofits	-	-	2.109	-	-	0.009	-	-	0.006	-	-	0.006	-	-	-	-	-	0.006
Subtotal: Support - Reserves - 155MM Ltwt Towed Howitzer Cost	-	-	2.686	-	-	0.009	-	-	0.006	-	-	0.006	-	-	-	-	-	0.006
Support - Prior Years Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2						P-1 Line Item Number / Title: 2185 / 155MM LtwT Towed Howitzer							Item Number / Title [DODIC]: 1 / 155MM LtwT Towed Howitzer - Active					
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
3.1) Prior Years Cumulative Funding	-	-	1,315.241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Prior Years Cost	-	-	1,315.241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	1,346.579	-	-	20.259	-	-	37.158	-	-	25.065	-	-	0.000	-	-	25.065

Footnotes:

- (1) FY18 & FY19 supports the fleet procurement of Software Defined Radios and associated brackets and cables. Radios will be procured using an existing Navy contract. The new Software Defined Radio will provide the ability to perform voice and data functions, which increases operational flexibility for firing, artillery unit. Deliveries are scheduled into the beginning of FY20.
- (2) FY19 reflects the award of the Inertial Navigation Unit (INU) recapitalization effort, for the fleet. By recapitalizing the INU, the USMC is saving \$70K a unit (Recapitalization = \$30K/Unit vs. New = \$100K/unit). Recapitalization involves the contractor replacing obsolete parts within the INU to extend the service life for another 20 years. Recapitalization deliveries continue into FY20.
- (3) Unit Cost is approximately \$151K per tube. Funding from FY17-FY20 will outfit the fleet. Chrome Cannon Tubes are procured via OGA at Watervliet Arsenal in New York.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons	P-1 Line Item Number / Title: 2212 / Artillery Weapons System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	622.229	60.103	130.981	100.002	0.000	100.002	63.685	71.062	63.420	63.702	-	1,175.184
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	622.229	60.103	130.981	100.002	0.000	100.002	63.685	71.062	63.420	63.702	-	1,175.184
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	622.229	60.103	130.981	100.002	0.000	100.002	63.685	71.062	63.420	63.702	-	1,175.184
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M142 High Mobility Artillery Rocket System (HIMARS) is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM). As a system HIMARS includes one launcher, two Re-Supply Systems (RSS), and the MFOM. The HIMARS provides Joint lethality in contested environments to the Marine Air-Ground Task Force (MAGTF) with 24 hour ground-based, responsive General Support/General Support Reinforcing (GS/GSR) indirect fires which accurately engage targets at long range, (60+km), with high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore, to include irregular warfare and distributed operations. AAO for HIMARS launchers is 57, increasing to 84 with the reactivation of HIMARS 5th Battalion, 10th Marines at IOC in FY21. HIMARS is also capable of firing the Reduced Range Practice Rocket (RRPR) for tactical training, classroom training and handling exercises.

This program maintains and modernizes the Marine Corps' Long Range Precision Fire (LRPF) and building a more lethal force capability. Engineering Change Proposals (ECP) and upgrades that address known and future reliability, sustainability, maintainability and obsolescence issues to ensure mission readiness and capability on the battlefield are mission critical and in support of the National Defense Strategy. Operational readiness and force posture allow HIMARS employment to be a proactive contributor in combat to enhance freedom of maneuver during combat contingency operations. This line also procures required training equipment, RRPRS and associated support.

The Navy/Marine Expeditionary Ship Interdiction System (NMESIS) will procure long term and short term solutions for an Anti-Ship Missile (ASM) capability in support of the Marine Corps Expeditionary Advanced Base Operations (EABO) and the National Defense Strategy approach to build a more lethal Joint Force. The NMESIS project will procure a USMC system while leveraging other Service-developed missiles to provide a ground based anti-access/area denial, anti-ship capability.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	56.913	127.913	100.002	-	100.002	63.685	71.062	63.420	63.702
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	3.190	3.068	-	-	-	-	-	-	-
Total:	Quantity	-	-	-	-	-	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons					P-1 Line Item Number / Title: 2212 / Artillery Weapons System					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Secondary Distribution	Total Obligation Authority	60.103	130.981	100.002	-	100.002	63.685	71.062	63.420	63.702

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons						P-1 Line Item Number / Title: 2212 / Artillery Weapons System				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / HIMARS	P-5a, P-21			- / 622.229	- / 60.103	- / 130.981	- / 100.002	- / 0.000	- / 100.002
P-40	Total Gross/Weapon System Cost				- / 622.229	- / 60.103	- / 130.981	- / 100.002	- / 0.000	- / 100.002
*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 Appropriation Request: \$54.743M HIMARS are fielded to both the Active (\$51.553M) and Reserve (\$3.190M) components. Funding procured the 360 GMLRS Alternative Warhead (AW) and 648 RRPRs. In addition, funds procured management and engineering support for HIMARS, GMLRS and RRPRs. Tactical GMLRS Hardware (Active and Reserves) unit costs are dependent on total quantities procured amongst the Army, Marine Corps and Foreign Military Sales (FMS) organizations in contract award. The Marine Corps Tactical GMLRS Hardware unit cost does not include GMLRS Training Devices. These systems are fielded to the active (\$51.553M & \$5.360M OCO) and reserve (\$3.190M) and components. Unit costs are dependent on total quantities procured amongst the Army, Marine Corps and Foreign Military Sales (FMS) organizations in contract award. FY 2019 Baseline Appropriation Request: \$130.981M HIMARS are fielded to both the Active (\$127.913M) and Reserve (\$3.068M) components. FY19 baseline increase of \$73.038M supports the re-activation of 5th Battalion 10th Marine Regiment (5/10) as a HIMARS Battalion. Funding is required for the procurement of HIMARS systems and support equipment for the new battalion and an associated increase in the total munitions requirement for rockets. Support funds provide maintenance vehicles, tool kits, training pods, test equipment, modification kits (long range communications, blue force tracker), shelters, install kits, spares and initial issue provisioning in various quantities to support 5th Battalion 10th Marines IOC in FY21. Support equipment includes items such as HIMARS maintenance vehicles, tool kits, training pods, test equipment, modification kits, shelters, install kits, spares and initial issue provisioning quantities to support 5th Battalion 10th Marines IOC in FY21. Starting in FY20 the USMC is accounting for Support Equipment costs under Peculiar Support Equipment to better align with the Army's budget structure RSS procurement costs will include product verification testing of vehicles from production line. GMLRS Alternative Warhead (AW) and RRPRs are being procured, noting unit costs are dependent on total quantities procured amongst the Army, Marine Corps and Foreign Military Sales (FMS) organizations in contract award. FY 2020 Baseline Appropriation Request: \$100.002M Beginning in FY20 the USMC is accounting for base costs and ancillary support items separately to better align with the Army's budget structure. Funding will continue the procurement of HIMARS launchers and communications equipment in support of the activation of 5/10. FY20 peculiar support equipment will include universal fire control systems (UFCS), project management administration, and production engineering for HIMARS. In addition, ancillary support items will be funded including; carrier, engineering services, system engineering, production engineering, fielding, government testing, and launcher peculiar support equipment. FY20 Peculiar Support Equipment increase accounts for the procurement of HIMARS maintenance vehicles, tool kits, training pods, test equipment, modification kits (long range communications, blue force tracker), shelters, install kits, spares and initial issue provisioning in various quantities to support 5th Battalion 10th Marines IOC in FY21. The RRPR quantity increase in FY 2020 will										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons		P-1 Line Item Number / Title: 2212 / Artillery Weapons System
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
support the additional annual training requirement for 5/10. RRPR unit prices are provided by the Army. The Marine Corps unit prices are lower than the Army's due to their inclusion of cost to Download/Demate (DL/DM) the M26 pod and rocket motor for production reuse. The Army's total cost also includes Bunker Storage and the procurement of Performance Oriented Packaging (POP) boxes. Beginning in FY20 the Guided Multiple Launch Rocket System (GMLRS) procurement budget (both active and reserve costs) are submitted separately in it's own Procurement, Marine Corps budget line item: 3025 - Guided MLRS Rocket (GMLRS). All GMLRS budgetary data prior to FY 2020 will reside in LI: - 2212 Artillery Weapon System (HIMARS). OCO: FY 2018 OCO Request: \$5.360M Funds procure Guided Multiple Launch Rocket System (GMLRS) to replenish rockets used in theater. FY 2019 OCO Appropriation Request: N/A FY 2020 OCO Appropriation Request: N/A		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2						P-1 Line Item Number / Title: 2212 / Artillery Weapons System						Item Number / Title [DODIC]: 1 / HIMARS						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				622.229		60.103		130.981		100.002		0.000		100.002				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				622.229		60.103		130.981		100.002		0.000		100.002				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				622.229		60.103		130.981		100.002		0.000		100.002				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Launcher ^{(†) (1)}	-	-	-	-	-	-	6,533K	10	65.331	7,378K	8	59.027	-	-	-	7,378K	8	59.027
1.1.2) Carrier ^(†)	-	-	-	-	-	-	597,660.00	10	5.977	642,625.00	8	5.141	-	-	-	642,625.00	8	5.141
1.1.3) Engineering Services	-	-	0.565	-	-	0.296	-	-	0.735	-	-	0.778	-	-	-	-	-	0.778
1.1.4) Program Management Admin	-	-	18.665	-	-	0.500	-	-	0.580	-	-	0.593	-	-	-	-	-	0.593
1.1.5) Peculiar Support Equipment ⁽²⁾	-	-	-	-	-	4.083	-	-	15.008	-	-	27.988	-	-	-	-	-	27.988
1.1.6) Peculiar Support Re-Supply Vehicle ^{(†) (3)}	-	-	-	-	-	-	170,500.00	36	6.138	-	-	-	-	-	-	-	-	-
1.1.7) Prior Year Flyaway, recurring costs	-	-	17.627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	36.857	-	-	4.879	-	-	93.769	-	-	93.527	-	-	-	-	-	93.527
Subtotal: Flyaway Cost	-	-	36.857	-	-	4.879	-	-	93.769	-	-	93.527	-	-	-	-	-	93.527
Hardware Cost																		
Recurring Cost																		
2.1.1) Tactical GMLRS Hardware (Active) ^{(†) (4)}	117,358.02	486	57.036	136,436.19	342	46.661	120,372.00	238	28.649	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2						P-1 Line Item Number / Title: 2212 / Artillery Weapons System						Item Number / Title [DODIC]: 1 / HIMARS						
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
2.1.2) Tactical GMLRS Hardware (Reserves) ^(†)	117,342.11	76	8.918	136,436.19	18	2.456	120,372.00	20	2.407	-	-	-	-	-	-	-	-	-
2.1.3) Tactical GMLRS Hardware Ancillary Production	-	-	-	-	-	0.409	-	-	0.449	-	-	-	-	-	-	-	-	-
2.1.4) Tactical GMLRS Hardware Ancillary Production (Reserves)	-	-	-	-	-	-	-	-	0.049	-	-	-	-	-	-	-	-	-
2.1.5) Reduced Range Practice Rocket ^{(†) (5)}	5,968.63	3,252	19.410	7,696.00	648	4.987	7,609.00	648	4.931	7,494.00	864	6.475	-	-	-	7,494.00	864	6.475
2.1.6) M31 Guided Multiple Launch Rocket Systems	201,038.61	2,020	406.098	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.7) M31 GMLRS (DODIC HA51) OCO	-	-	77.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.1.8) ATACMS Procurement	1,700K	1	1.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	570.195	-	-	54.513	-	-	36.485	-	-	6.475	-	-	-	-	-	6.475
Subtotal: Hardware Cost	-	-	570.195	-	-	54.513	-	-	36.485	-	-	6.475	-	-	-	-	-	6.475
Support Cost																		
3.1) Munitions Engineering Services	-	-	12.108	-	-	0.711	-	-	0.727	-	-	-	-	-	-	-	-	-
3.2) Prior Year Support Costs	-	-	3.069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	-	-	15.177	-	-	0.711	-	-	0.727	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	622.229	-	-	60.103	-	-	130.981	-	-	100.002	-	-	0.000	-	-	100.002

(†) indicates the presence of a P-5a

Footnotes:

(1) Starting in FY20 the USMC is accounting for HIMARS Launcher base costs and ancillary support items separately to better align with the Army's budget structure. FY21 launcher unit cost is approx. \$1M less than FY20 because universal fire control system (UFCS) for those launchers were procured in FY20.

(2) FY20 Peculiar Support Equipment increase procures support equipment which includes items such as HIMARS maintenance vehicles, tool kits, training pods, test equipment, modification kits (long range communications, blue force tracker), shelters, install kits, spares and initial issue provisioning in various quantities to support 5th Battalion 10th Marines IOC in FY21.

(3) RSS procurement costs will include product verification testing of vehicles from production line.

(4) Tactical GMLRS Hardware (Active and Reserves) unit costs are based on total quantities procured as a joint buy with Army.

(†) indicates the presence of a P-5a

Footnotes:

- (1) Starting in FY20 the USMC is accounting for HIMARS Launcher base costs and ancillary support items separately to better align with the Army's budget structure. FY21 launcher unit cost is approx. \$1M less than FY20 because universal fire control system (UFCS) for those launchers were procured in FY20.
- (2) FY20 Peculiar Support Equipment increase procures support equipment which includes items such as HIMARS maintenance vehicles, tool kits, training pods, test equipment, modification kits (long range communications, blue force tracker), shelters, install kits, spares and initial issue provisioning in various quantities to support 5th Battalion 10th Marines IOC in FY21.
- (3) RSS procurement costs will include product verification testing of vehicles from production line.
- (4) Tactical GMLRS Hardware (Active and Reserves) unit costs are based on total quantities procured as a joint buy with Army.

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LI 2212 - Artillery Weapons System
Navy

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2				P-1 Line Item Number / Title: 2212 / Artillery Weapons System				Item Number / Title [DODIC]: 1 / HIMARS				
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) Launcher ^(†)		2019	Lockheed / Dallas, Tx	SS / FFP	Huntsville, AL	Jul 2019	Jan 2021	10	6,533K	N	Dec 2019	
1.1.1) Launcher ^(†)		2020	Lockheed / Dallas, Tx	SS / FFP	Huntsville, AL	Jul 2020	Jan 2022	8	7,378K	N	Dec 2020	
1.1.2) Carrier ^(†)		2019	Lockheed / Dallas, Tx	SS / FFP	Huntsville, AL	Jul 2019	Jan 2021	10	597,660.00	N	Dec 2019	
1.1.2) Carrier ^(†)		2020	Lockheed / Dallas, Tx	SS / FFP	Huntsville, AL	Jul 2020	Jan 2022	8	642,625.00	N	Dec 2020	
1.1.6) Peculiar Support Re-Supply Vehicle ^(†)		2019	Oshkosh Corp LLC / Oshkosh WI	SS / FFP	Huntsville, AL	Feb 2019	Feb 2021	36	170,500.00	N	Dec 2019	Aug 2018
2.1.1) Tactical GMLRS Hardware (Active) ^(†)		2017	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	May 2017	Jul 2018	336	117,019.59	N	Feb 2017	Feb 2016
2.1.1) Tactical GMLRS Hardware (Active) ^(†)		2018	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	Apr 2018	Aug 2019	312	136,436.19	N	Feb 2018	Feb 2017
2.1.1) Tactical GMLRS Hardware (Active) ^(†)	✓	2018	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	Apr 2018	Aug 2019	30	136,436.19	N	Feb 2018	Feb 2017
2.1.1) Tactical GMLRS Hardware (Active) ^(†)		2019	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	Mar 2019	Jun 2020	238	120,372.00	N	Feb 2019	Feb 2018
2.1.2) Tactical GMLRS Hardware (Reserves) ^(†)		2017	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	May 2017	Jul 2018	24	117,019.59	N	May 2017	Feb 2016
2.1.2) Tactical GMLRS Hardware (Reserves) ^(†)		2018	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	Apr 2018	Aug 2019	18	136,436.19	N	Nov 2018	Feb 2017
2.1.2) Tactical GMLRS Hardware (Reserves) ^(†)		2019	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Command	Mar 2019	Jun 2020	20	120,372.00	N	Jul 2020	Feb 2018
2.1.5) Reduced Range Practice Rocket ^(†)		2018	LetterKenny Munitions Center / Chambersburg, PA	MIPR	Letterkenny, PA	Jul 2018	Nov 2019	648	7,696.00	N	Sep 2019	
2.1.5) Reduced Range Practice Rocket ^(†)		2019	LetterKenny Munitions Center / Chambersburg, PA	MIPR	Letterkenny, PA	May 2019	Apr 2021	648	7,609.00	N	Apr 2021	
2.1.5) Reduced Range Practice Rocket ^(†)		2020	LetterKenny Munitions Center / Chambersburg, PA	MIPR	Letterkenny, PA	May 2020	Apr 2022	864	7,494.00	N	Apr 2022	
^(†) indicates the presence of a P-21												

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Exhibit P-21, Production Schedule: PB 2020 Navy																		Date: March 2019																						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2212 / Artillery Weapons System										Item Number / Title [DODIC]: 1 / HIMARS																				
Cost Elements (Units in Each)							Fiscal Year 2017										Fiscal Year 2018										BALANCE													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018																							
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY		JUN	JUL	AUG	SEP									
1.1.1) Launcher ⁽¹⁾																																								
	1	2019	NAVY	10	0	10																					10													
	1	2020	NAVY	8	0	8																					8													
1.1.2) Carrier																																								
	2	2019	NAVY	10	0	10																					10													
	2	2020	NAVY	8	0	8																					8													
1.1.6) Peculiar Support Re-Supply Vehicle ⁽³⁾																																								
	3	2019	NAVY	36	0	36																					36													
2.1.1) Tactical GMLRS Hardware (Active) ⁽⁴⁾																																								
Prior Years Deliveries: 150																																								
	4	2017	NAVY	336	0	336											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	336		0					
	4	2018	NAVY	312	0	312																					A -	-	-	-	-	-	-	-	-	-	-	-	-	312
✓	4	2018	NAVY	30	0	30																					A -	-	-	-	-	-	-	-	-	-	-	-	-	30
	4	2019	NAVY	238	0	238																															238			
2.1.2) Tactical GMLRS Hardware (Reserves)																																								
Prior Years Deliveries: 52																																								
	5	2017	NAVY	24	0	24											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24		0					
	5	2018	NAVY	18	0	18																					A -	-	-	-	-	-	-	-	-	-	-	-	18	
	5	2019	NAVY	20	0	20																															20			
2.1.5) Reduced Range Practice Rocket ⁽⁵⁾																																								
Prior Years Deliveries: 3252																																								
	6	2018	NAVY	648	0	648																					A -	-	-											648
	6	2019	NAVY	648	0	648																															648			
	6	2020	NAVY	864	0	864																															864			
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP										

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2212 / Artillery Weapons System										Item Number / Title [DODIC]: 1 / HIMARS																
Cost Elements (Units in Each)							Fiscal Year 2019										Fiscal Year 2020													B A L A N C E						
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT				Calendar Year 2019										Calendar Year 2020																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P					
1.1.1) Launcher ⁽¹⁾																																				
	1	2019	NAVY	10	0	10											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
	1	2020	NAVY	8	0	8																								A -	-	-	8			
1.1.2) Carrier																																				
	2	2019	NAVY	10	0	10											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
	2	2020	NAVY	8	0	8																								A -	-	-	8			
1.1.6) Peculiar Support Re-Supply Vehicle ⁽³⁾																																				
	3	2019	NAVY	36	0	36						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36			
2.1.1) Tactical GMLRS Hardware (Active) ⁽⁴⁾																																				
Prior Years Deliveries: 150																																				
	4	2017	NAVY	336	336	0																											0			
	4	2018	NAVY	312	0	312	-	-	-	-	-	-	-	-	-	-	156	156															0			
✓	4	2018	NAVY	30	0	30	-	-	-	-	-	-	-	-	-	30															0					
	4	2019	NAVY	238	0	238						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238	0					
2.1.2) Tactical GMLRS Hardware (Reserves)																																				
Prior Years Deliveries: 52																																				
	5	2017	NAVY	24	24	0																											0			
	5	2018	NAVY	18	0	18	-	-	-	-	-	-	-	-	-	18															0					
	5	2019	NAVY	20	0	20						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	0						
2.1.5) Reduced Range Practice Rocket ⁽⁵⁾																																				
Prior Years Deliveries: 3252																																				
	6	2018	NAVY	648	0	648	-	-	-	-	-	-	-	-	-	-	-	54	54	54	54	54	54	54	54	54	54	54	54	54	54					
	6	2019	NAVY	648	0	648											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	648			
	6	2020	NAVY	864	0	864																								A -	-	-	-	-	-	864
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2212 / Artillery Weapons System										Item Number / Title [DODIC]: 1 / HIMARS														
Cost Elements (Units in Each)							Fiscal Year 2021										Fiscal Year 2022													B A L A N C E				
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT				Calendar Year 2021										Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P			
1.1.1) Launcher ⁽¹⁾																																		
	1	2019	NAVY	10	0	10	-	-	-	10																								0
	1	2020	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8											0		
1.1.2) Carrier																																		
	2	2019	NAVY	10	0	10	-	-	-	1	1	1	1	1	1	1	1	1											0					
	2	2020	NAVY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	0				
1.1.6) Peculiar Support Re-Supply Vehicle ⁽³⁾																																		
	3	2019	NAVY	36	0	36	-	-	-	-	3	3	3	3	3	3	3	3	3	3											0			
2.1.1) Tactical GMLRS Hardware (Active) ⁽⁴⁾																																		
Prior Years Deliveries: 150																																		
	4	2017	NAVY	336	336	0																									0			
	4	2018	NAVY	312	312	0																									0			
✓	4	2018	NAVY	30	30	0																									0			
	4	2019	NAVY	238	238	0																									0			
2.1.2) Tactical GMLRS Hardware (Reserves)																																		
Prior Years Deliveries: 52																																		
	5	2017	NAVY	24	24	0																									0			
	5	2018	NAVY	18	18	0																									0			
	5	2019	NAVY	20	20	0																									0			
2.1.5) Reduced Range Practice Rocket ⁽⁵⁾																																		
Prior Years Deliveries: 3252																																		
	6	2018	NAVY	648	594	54	54																								0			
	6	2019	NAVY	648	0	648	-	-	-	-	-	-	54	54	54	54	54	54	54	54	54	54	54								0			
	6	2020	NAVY	864	0	864	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	126	126	90	60	60	348						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2212 / Artillery Weapons System													Item Number / Title [DODIC]: 1 / HIMARS												
Cost Elements (Units in Each)							Fiscal Year 2023												Fiscal Year 2024													BALANCE			
OCO#	MFR#	FY	SERVICE	PROCQTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT				Calendar Year 2023												Calendar Year 2024													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
1.1.1) Launcher ⁽¹⁾																																			
	1	2019	NAVY	10	10	0																			0										
	1	2020	NAVY	8	8	0																			0										
1.1.2) Carrier																																			
	2	2019	NAVY	10	10	0																			0										
	2	2020	NAVY	8	8	0																			0										
1.1.6) Peculiar Support Re-Supply Vehicle ⁽³⁾																																			
	3	2019	NAVY	36	36	0																			0										
2.1.1) Tactical GMLRS Hardware (Active) ⁽⁴⁾																																			
Prior Years Deliveries: 150																																			
	4	2017	NAVY	336	336	0																			0										
	4	2018	NAVY	312	312	0																			0										
✓	4	2018	NAVY	30	30	0																			0										
	4	2019	NAVY	238	238	0																			0										
2.1.2) Tactical GMLRS Hardware (Reserves)																																			
Prior Years Deliveries: 52																																			
	5	2017	NAVY	24	24	0																			0										
	5	2018	NAVY	18	18	0																			0										
	5	2019	NAVY	20	20	0																			0										
2.1.5) Reduced Range Practice Rocket ⁽⁵⁾																																			
Prior Years Deliveries: 3252																																			
	6	2018	NAVY	648	648	0																			0										
	6	2019	NAVY	648	648	0																			0										
	6	2020	NAVY	864	516	348	60	60	60	60	54	54																	0						
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy				Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2			P-1 Line Item Number / Title: 2212 / Artillery Weapons System			Item Number / Title [DODIC]: 1 / HIMARS	

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Lockheed - Dallas, Tx			TBD	0	0	0	0	0	0	0	0
2	Lockheed - Dallas, Tx			15	0	0	0	0	0	0	0	0
3	Oshkosh Corp LLC - Oshkosh WI			TBD	0	0	0	0	0	0	0	0
4	Lockheed Martin - Dallas, TX	1,080	3,000	6,000	0	2	0	2	0	2	24	26
5	Lockheed Martin - Dallas, TX	1,848	3,000	6,000	8	2	0	2	2	2	20	22
6	LetterKenny Munitions Center - Chambersburg, PA	540	864	1,440	0	2	15	17	0	2	16	18

"A" in the Delivery Schedule indicates the Contract Award Date.

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

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons	P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	110.260	17.293	40.687	31.945	0.000	31.945	26.963	37.349	13.026	13.286	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	110.260	17.293	40.687	31.945	0.000	31.945	26.963	37.349	13.026	13.286	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	110.260	17.293	40.687	31.945	0.000	31.945	26.963	37.349	13.026	13.286	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Family of Infantry Weapons Systems (FIWS) provides for continuous monitoring, assessment of and implementation of Joint Service and USMC unique system modifications for individual and crew-served weapons. This includes efforts such as: improving weapon capability, operation, maintainability, supportability, service life, ergonomics, and safety enhancements. FIWS also supports replacement of principle end items (PEI) due to combat losses, wash-outs, and increases in units required, as well as continuing product improvement and modernization of various weapon systems and their support equipment. Gunners Protection Kit (GPK) for mounted weapons systems procurement was also funded in FIWS until FY20 when it was given its own Marine Corps Product Code (MCPC) designation.

Gunners Protection Kit (GPK) supports the Tube-launched, Optically Tracked, Wire-guided (TOW) Objective Gunners Protection Kit Version 2.0 (TOGPK 2.0) which is the planned upgrade and replacement for the TOW Gunners Protection Kit (TGPK) currently in use with TOW High Mobility Multipurpose Wheeled Vehicle variants. TOGPK 2.0 affords the TOW gunners protection from small arms fire and Improvised Explosive Device fragmentation. TOGPK 2.0 addresses user concerns regarding limited workspace and TOW slew as well as improved operator visibility. The Reducible Height Gunners Protection Kit (RHGPK) enables Joint Light Tactical Vehicles (JLTV), Medium/Heavy Tactical Vehicle Replacement (MTVR) and Logistics Vehicle System Replacement (LVSr) to be transported in the lower vehicle stowage areas of Landing Platform/Dock (LPD 17) and Landing Helicopter Dock class ships. GPK was previously funded in the Family of Infantry Weapons (FIWS) and was given its own MCPC designation beginning in FY20.

Company and Battalion Mortars provides procurement, modification, and sustainment of mortars and mortar fire control systems to enable access to immediate indirect fires in support of mounted and dismounted forces to the company and battalion level. This initiative sustains the new lightweight company and battalion mortar capability and more than 50 mortar components, incorporates component product improvements and modifications such as improved sights and aiming devices, and hardware/software refresh/upgrades for the Lightweight Hand-held Mortar Ballistic Computer (LHMBC) capability.

Escalation of Force - Equipment (EoF-E) funding supports type-classification, testing and procurement of new advancements and technologies to provide an increased capability over existing or outdated equipment currently or associated in the Escalation of Force-Mission Modules (EoF-MMs). EoF-MMs provide commanders with an improved ability to respond to situations with varying levels of non-lethal force by way of modular capability sets that can be tailored and scaled to fit missions down to the platoon and squad level.

Ocular Interruption (OI) is the replacement of the 'Dazzling Laser' program for the LA-9/P and the GLARE-MOUT 532P-M (Mini Green) laser. OI is a non-damaging dazzling system that will be used in Escalation of Force-Missions to provide a non-lethal, force protection capability to warn and visually suppress targeted personnel at ranges from 10 to 500 meters.

FIRS supports Countering Weapons of Mass Destruction (CWMD) and Chemical, Biological, Radiological and Nuclear (CBRN) mission areas by providing first response protection, detection, identification, and decontamination equipment to the Marine Air-Ground Task Force (MAGTF) and the Chemical Biological Incident Response Force (CBIRF).

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons					P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Wpns & Cmbt Vehs under \$5 million	P-5a, P-21			- / 110.260	- / 17.293	- / 40.687	- / 31.945	- / -	- / 31.945
P-40	Total Gross/Weapon System Cost				- / 110.260	- / 17.293	- / 40.687	- / 31.945	- / 0.000	- / 31.945
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Base Appropriation: \$17.293M Family of Infantry Weapons Systems - \$9.108M procured M27 Infantry Automatic Rifles (IARs) and associated equipment, as well as the MK 13 Rifle with associated optic. Funding also supported various program/acquisition support activities, and provided for continuous monitoring, assessment of and implementation of Joint Service and USMC unique system modifications. This included efforts such as: improve weapon capability, operation, maintainability, supportability, service life, ergonomics, and safety enhancements. Family of Incident Response Systems (FIRS) - \$0.454M supported the modernization of CBIRF's legacy Unified Command Suite (UCS), which faced obsolescence. Company and Battalion Mortars - \$0.810M procured component replacement parts, mandatory replacement parts, repair parts, and additional tools in order to complete the M177A1 Mortar Mount retrofit required to address fielding issues and several Marine Corps and U.S. Army Product Quality Deficiency Reports (PQDR). Ocular Interruption (OI) - \$6.921M was used to procure 550 OI systems which is a "Non-damaging" dazzling system used in Escalation of Force-Missions to provide a non-lethal, force protection capability to warn and visually suppress targeted personnel at ranges from 10 to 500 meters. FY 2019 Base Appropriation: \$40.687M Family of Infantry Weapons Systems - \$28.292M supports the continuous monitoring, assessment of and implementation of Joint Service and USMC unique system modifications. This includes efforts such as: improve weapon capability, operation, maintainability, supportability, service life, ergonomics, and safety enhancements. Funds support procurement and fielding of M27 Infantry Automatic Rifles (IAR), Modular Handgun Systems (MHS), Compact Semi-Automatic Sniper System (CSASS), M320A1 Grenade Launchers, Tow Objective Gunner Protection Kit 2.0 (TOGPK 2.0), and M4 Carbines. FY19 plans adjusted to align better with current USMC priorities for infantry weapons. The M320A1 grenade launcher and M4 carbine were designated a higher priority for increased lethality than the MHS handgun. Cost savings from the M27 procurement and a re-prioritization of MHS funding were applied to the M320A1 effort to the max ceiling on the Army contract. The procurement of additional M27s increases the lethality of Marine Corps' ground combat element while conducting a range of military operations. The M27 is currently used by Marine infantry units and has proven to be highly reliable, giving Marine ground forces the ability to provide firepower superiority and effective suppression as needed. The Modular Handgun System will be purchased to replace the legacy M9, M9A1, M45A1, and M007 pistols with a more affordable and efficient pistol for maintenance. The MHS also provides modularity and greater shooter ergonomics over the current models which will allow for more accurate fire for military personnel of different sizes. The Compact Semi-Automatic Sniper System (CSASS) will replace the M110 with enhanced shooter ergonomics and increased operational availability time. The lighter, more capable rifle will improve the sniper's ability to rapidly engage multiple, moving targets. The M320A1 Grenade Launcher will replace the M203 in Marine Infantry and Infantry-like units. Due to its side breach, the M320A1 will allow for the use of more capable 40mm grenades for counter-defilade, breaching and non-lethal applications. The TOGPK 2.0 increases the protection level (survivability), and increases the traverse capability (lethality) of mounted weapons systems over legacy GPKs for gunners in Marine Corps vehicles. M4 Carbines will be procured to support the Small Arms strategy of divesting the Ground Combat Element of M16A4s. Funding also supports principle end items (PEI), as well as continuing product improvement and modernization of sniper and special purpose weapons, and support equipment. Additionally funding also supports various program/acquisition support activities, such as ammunition costs related to those production verification activities.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons		P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
Family of Incident Response Systems (FIRS) - \$0.476M supports the annual modernization of the Unified Command Suite (UCS). The legacy UCS, which is CBIRF's primary command and control vehicle, will face obsolescence if scheduled modernizations of its satellite communications and land mobile radio systems are not applied in FY19. The FY19 request for FIRS represents the UCS modernization costs only. Company and Battalion Mortars - \$2.666M procures items in support of the bipod component part replacement, new baseplate replacements, an advanced video borescope and the planned purchase of hardware and peripherals in kind of the M32 Lightweight Handheld Mortar Ballistic Computer (LHMBC). The hardware will be integrated with Mortar Fire Control Application software to provide accurate ballistic calculations for 60mm and 81mm mortar weapons systems. The replacement in kind will be conducted as a multi-year effort to maintain the current capability against projected loss of M32 LHMBC hardware due to end of service obsolescence and diminishing on-hand sustainment stock until a common Marine Corps hardware solution for software applications is identified. If projected M32 LHMBC hardware losses are not realized, funds will be used to procure company and battalion mortar system principal end item replacements, component product improvements and replacements, assess and implement system modifications in order to improve system operation and performance. Escalation of Force Equipment (EoF-E) - \$0.228M procures Escalation of Force Mission Module upgraded components such as the Improved Voice Translation Device and the dazzling laser capability. Ocular Interruption (OI) - \$9.025M procures 597 OI systems. These new laser dazzling systems are "non-damaging" systems used in Escalation of Force Missions to provide a non-lethal, force protection capability to warn and visually suppress targeted personnel out to 500 meters. These systems are replacing the legacy LA-9/P and GLARE-MOUT 532P-M (Mini Green) systems, which have been deemed inherently dangerous by the Navy Laser Safety Review Board. In addition, parts kits will be procured to complete the initial provisioning for these systems in accordance with the Depot Maintenance Float Activity (DMFA) support strategy. FY 2020 Base Appropriation: \$31.945M Family of Infantry Weapons Systems - \$17.022M will support the continuous monitoring, assessment of and implementation of Joint Service and USMC unique system modifications. This includes efforts such as: improve weapon capability, operation, maintainability, supportability, service life, ergonomics, and safety enhancements. The funding decrease from FY19 to FY20 of \$11.270M is due to the establishment of a separate program for the Gunners Protection Kit (GPK). Funding supports procurement and fielding of Compact Semi-Automatic Sniper System (CSASS), M320A1 Grenade Launchers, Small Arms Suppressors, Modular Handgun System (MHS), and M4 Carbines. The Compact Semi-Automatic Sniper System (CSASS) will replace the M110 with enhanced shooter ergonomics and increased operational availability time. The lighter, more capable rifle will improve the sniper's ability to rapidly engage multiple, moving targets. The M320A1 Grenade Launcher will replace the M203 in Marine Corps units. Due to its side breach, the M320A1 will allow for the use of more capable 40mm grenades for counter-defilade, breaching and non-lethal applications. Suppressors will be procured in order to improve communication on the battlefield, as well as reduce detection by a threat through reduced audible and visible signatures. Suppressors will also support the effort to reduce Marines' hearing loss. M4 Carbines will be procured to support the Small Arms strategy of divesting the Ground Combat Element of M16A4s. Funding also supports principle end items (PEI), as well as continuing product improvement and modernization of sniper and special purpose weapons, and support equipment. Additionally, funding also supports various program/acquisition support activities, such as ammunition costs related to those production verification activities. Gunners Protection Kit (GPK) - \$11.365M will procure Gunners Protection Kits - \$10.440M for TOGPK 2.0 and \$0.910M for Reducible Height Gunners Protection Kits (RHGPK). RHGPK will be reducible in height to enable Joint Light Tactical Vehicles (JLTV) to be transported in the lower vehicle stowage areas of Landing Platform/Dock (LPD 17) and Landing Helicopter Dock class ships and to enable Medium/Heavy Tactical Vehicle Replacement and Logistics Vehicle System Replacement to be transported in the main vehicle stowage decks of LPD 17 class ships. Both TOGPK and RHGPK provide enhanced survivability and ballistic protection to the gunner when compared to existing gunner protection kits. This requirement was funded under Family of Infantry Weapons Systems prior to FY20. The increase from \$2.920M in FY19 in FIWS to \$10.440M in FY20 is to procure the final 261 TOGPK systems. The increase from \$0.0M in FY19 in FIWS to \$0.910M in FY20 is to procure 26 low-rate initial production RHGPK systems. Company and Battalion Mortars - \$3.018M will support component and assembly upgrades to the inventory of 60mm and 81mm mortar systems, mortar system inspection and maintenance equipment, and mortar fire control systems; ammunition costs related to mortar production verification activities, as required; and hardware for mortar fire control and setter systems. The increase of \$0.352M from FY19 to FY20 is for the planned procurement of additional mortar fire control and setter system hardware. Escalation of Force Equipment (EoF-E) - The USMC decided to terminate the Escalation of Force Equipment program in FY20 in order to better align with the National Defense Strategy.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 2: Artillery and Other Weapons		P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
Ocular Interruption (OI) - \$0.00 - The decrease of \$9.025M from FY19 to FY20 is due to the completion of Ocular Interruption procurements. Family of Incident Response Systems (FIRS) - \$0.540M will be used to support the annual modernization of the Unified Command Suite (UCS). The legacy UCS, which is CBIRF's primary command and control vehicle, faces obsolescence if scheduled modernizations of its satellite communications and land mobile radio systems are not applied in FY20. The increase of \$.064M from FY19 to FY20 is due to scheduled engineering changes and upgrades to the UCS Block II to include the modernization of the SIPR Laptop and Serial Port Server.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2									P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million						Aggregated Items Title: Wpns & Cmbt Vehs under \$5 million					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Company and Battalion Mortars ⁽¹⁾																				
1.1) Company and Battalion Mortars	A		-	-	12.020	-	-	0.810	-	-	2.666	-	-	3.018	-	-	-	-	-	3.018
Subtotal: 1) Company and Battalion Mortars			-	-	12.020	-	-	0.810	-	-	2.666	-	-	3.018	-	-	-	-	-	3.018
2) Family of Infantry Weapons Systems ⁽²⁾																				
2.1) Production Support ⁽³⁾	A		-	-	5.925	-	-	0.086	-	-	0.987	-	-	1.094	-	-	-	-	-	1.094
2.2) Infantry Automatic Rifle (IAR) ^(†)	A		1,000.00	2,649	2.649	1,000.00	2,965	2.965	1,000.00	6,927	6.927	-	-	-	-	-	-	-	-	-
2.3) IAR Accessories ⁽⁴⁾	A		-	-	0.003	-	-	1.713	-	-	2.386	-	-	-	-	-	-	-	-	-
2.4) MK 13 Sniper Rifle ^(†)	A		-	-	-	11,077.59	356	3.944	-	-	-	-	-	-	-	-	-	-	-	-
2.5) M320A1 Grenade Launcher ^{(5)(†)}	A		-	-	-	-	-	-	1,055.00	6,307	6.654	1,158.00	2,124	2.460	-	-	-	1,158.00	2,124	2.460
2.6) Compact Semi Auto Sniper System (CSASS) ^(†)	A		-	-	-	-	-	-	8,595.00	116	0.997	8,595.00	154	1.324	-	-	-	8,595.00	154	1.324
2.8) Modular Handgun System (MHS) Pistol ^(†)	A		-	-	-	-	-	-	175.50	20,648	3.624	175.50	12,184	2.138	-	-	-	175.50	12,184	2.138
2.9) MHS Accessories ⁽⁶⁾	A		-	-	-	-	-	-	-	-	1.217	-	-	0.664	-	-	-	-	-	0.664
2.11) TOGPK 2.0 ^{(7)(†)}	A		-	-	-	-	-	-	40,000.00	73	2.920	-	-	-	-	-	-	-	-	-
2.12) Small Arms Suppressor ⁽⁸⁾	A		-	-	-	-	-	-	-	-	-	-	-	8.679	-	-	-	-	-	8.679
2.13) M4 Carbine ^{(9)(†)}	A		-	-	-	-	-	-	645.00	4,000	2.580	645.00	1,028	0.663	-	-	-	645.00	1,028	0.663
2.14) M240 Machine Gun Kits	A		-	-	-	-	-	0.400	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) Family of Infantry Weapons Systems			-	-	8.577	-	-	9.108	-	-	28.292	-	-	17.022	-	-	-	-	-	17.022
3) Escalation of Force/Mission Modules																				
3.1) EoF Various Equipment (Various)	A		-	-	2.898	-	-	-	-	-	0.228	-	-	-	-	-	-	-	-	-
Subtotal: 3) Escalation of Force/ Mission Modules			-	-	2.898	-	-	-	-	-	0.228	-	-	-	-	-	-	-	-	-
4) Ocular Interruption																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2								P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million								Aggregated Items Title: Wpns & Cmbt Vehs under \$5 million			

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.1) Procurement of OI Systems ^{(10)(t)}	A		13,906.98	43	0.598	12,584.00	550	6.921	10,895.00	677	7.376	-	-	-	-	-	-	-	-	-
4.2) Parts Kits	A		-	-	-	-	-	-	-	-	1.600	-	-	-	-	-	-	-	-	-
4.3) Production Support	A		-	-	0.020	-	-	-	-	-	0.049	-	-	-	-	-	-	-	-	-
Subtotal: 4) Ocular Interruption			-	-	0.618	-	-	6.921	-	-	9.025	-	-	-	-	-	-	-	-	-
5) Family of Incident Response Systems																				
5.1) Family of Incident Response Systems	A		-	-	-	-	-	0.454	-	-	0.476	-	-	0.540	-	-	-	-	-	0.540
Subtotal: 5) Family of Incident Response Systems			-	-	0.000	-	-	0.454	-	-	0.476	-	-	0.540	-	-	-	-	-	0.540
7) Gunners Protection Kit																				
7.1) TOGPK 2.0 Production Units ^{(11)(t)}	A		-	-	-	-	-	-	-	-	-	40,000.00	261	10.440	-	-	-	40,000.00	261	10.440
7.2) RHGPK Production Units ^(t)	A		-	-	-	-	-	-	-	-	-	35,000.00	26	0.910	-	-	-	35,000.00	26	0.910
7.3) Production Support	A		-	-	-	-	-	-	-	-	-	-	-	0.015	-	-	-	-	-	0.015
Subtotal: 7) Gunners Protection Kit			-	-	0.000	-	-	-	-	-	-	-	-	11.365	-	-	-	-	-	11.365
8) Prior Years Cumulative Funding																				
8.1) Prior Years Cumulative Funding	A		-	-	86.147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) Prior Years Cumulative Funding			-	-	86.147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	110.260	-	-	17.293	-	-	40.687	-	-	31.945	-	-	-	-	-	31.945

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

(t) indicates the presence of a P-5a

Footnotes:

- (1) The FY19 increase in funding for Company and Battalion Mortars procures the second year of a planned multi-year procurement of hardware and peripherals for a replacement in kind of the M32 Lightweight Handheld Mortar Ballistic Computer (LHNBC).
- (2) The FY19 increase for Family of Infantry Weapons supports the procurement and fielding of M27 Infantry Automatic Rifles (IAR), Modular Handgun Systems (MHS), Compact Semi-Automatic Sniper System (CSASS), and M320A1 Grenade Launchers.
- (3) Family of Infantry Weapons Systems Production Support provides funding for various elements related to the entire Infantry Weapons portfolio, including acquisition support, in-house travel in support of the Procurement phase of acquisition, and small purchases.
- (4) IAR Accessories include SL-3, ancillary equipment, and spare parts
- (5) The M320A1 unit price increase from FY19 to FY20 reflects current cost projections for the Army's new contract, which will be re-competed in FY20.
- (6) MHS accessories include items such as a customized holster.
- (7) Tow Objective Gunner Protection Kit 2.0 (TOGPK 2.0)
- (8) Program Office is conducting Market Research for unit cost estimates.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2	P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million	Aggregated Items Title: Wpns & Cmbt Vehs under \$5 million

(9) Contract for M4 Carbines will be competed by TACOM for each Delivery Order between FN and Colt. Until the Delivery Order is awarded, manufacturer and delivery lead times are estimates only.

(10) The OI unit price in each FY reflects the contract's step ladder pricing based on quantity in each order period.

(11) TOGPK 2.0 funded within FIWS in FY19 for \$2.920M prior to creation of the GPK in FY20. Increase of \$7.520M between FY19 and FY20 due to increase in quantity of systems procured; the unit price did not change.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2				P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million					Aggregated Items: Wpns & Cmbt Vehs under \$5 million			
Item Number / Title [DODIC]	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
2) Family of Infantry Weapons Systems												
2.2) Infantry Automatic Rifle (IAR)		2017	Heckler & Koch@Ashburn, VA / Ashburn, VA	C / IDIQ	MARCORSYSCOM, Quantico, VA	Apr 2018	Jan 2019	2,649	1,000.00	Y		Mar 2018
2.2) Infantry Automatic Rifle (IAR)		2018	Heckler & Koch@Ashburn, VA / Ashburn, VA	C / IDIQ	MARCORSYSCOM	Apr 2018	Jan 2019	2,965	1,000.00	Y		Mar 2018
2.2) Infantry Automatic Rifle (IAR)		2019	Heckler & Koch@Ashburn, VA / Ashburn, VA	C / IDIQ	MARCORSYSCOM, Quantico, VA	Nov 2018	Aug 2019	6,927	1,000.00	Y		Oct 2018
2.4) MK 13 Sniper Rifle		2018	NSWC, Crane / Crane, IN	WR	Crane, IN	Feb 2018	Jun 2018	356	11,077.59	Y		
2.5) M320A1 Grenade Launcher ⁽⁵⁾		2019	Capco LLC / Grand Junction, CO	C / IDIQ	Picatinny, NJ	Feb 2019	Jan 2020	6,307	1,055.00	Y		
2.5) M320A1 Grenade Launcher ⁽⁵⁾		2020	Capco LLC / Grand Junction, CO	C / IDIQ	Picatinny, NJ	Feb 2020	Jul 2020	2,124	1,158.00	Y		
2.6) Compact Semi Auto Sniper System (CSASS)		2019	Heckler & Koch@Ashburn, VA / Ashburn, VA	C / IDIQ	Picatinny, NJ	Feb 2019	Nov 2019	116	8,595.00	Y		
2.6) Compact Semi Auto Sniper System (CSASS)		2020	Heckler & Koch@Ashburn, VA / Ashburn, VA	C / IDIQ	Picatinny, NJ	Feb 2020	Nov 2020	154	8,595.00	Y		
2.8) Modular Handgun System (MHS) Pistol		2019	Sig Sauer / Newington, NH	C / IDIQ	Picatinny, NJPicatinny, NJ	Jan 2019	Feb 2019	20,648	175.50	Y		
2.8) Modular Handgun System (MHS) Pistol		2020	Sig Sauer / Newington, NH	C / IDDQ	Picatinny, NJ	Oct 2019	Nov 2019	12,184	175.50	N		
2.11) TOGPK 2.0 ⁽⁷⁾		2019	Rock Island Arsenal / Rock Island, IL	MIPR	Rock Island, IL	Feb 2019	Jun 2019	73	40,000.00	Y		
2.13) M4 Carbine ⁽⁹⁾		2019	FN or Colt ⁽¹²⁾ / TBD	C / IDIQ	TACOM	Feb 2019	Sep 2020	4,000	645.00	Y		
2.13) M4 Carbine ⁽⁹⁾		2020	FN or Colt ⁽¹²⁾ / TBD	C / IDIQ	TACOM	Feb 2020	Sep 2021	1,028	645.00	Y		
4) Ocular Interruption												
4.1) Procurement of OI Systems (10)		2017	B.E. Meyers / Redmond, WA	C / IDIQ	Quantico, VA	Jul 2017	Nov 2017	43	13,907.00	Y		
4.1) Procurement of OI Systems (10)		2018	B.E. Meyers / Redmond, WA	C / IDIQ	Quantico, VA	Dec 2017	Feb 2018	550	12,584.00	Y		
4.1) Procurement of OI Systems (10)		2019	B.E. Meyers / Redmond, WA	C / IDIQ	Quantico, VA	Dec 2018	Feb 2019	677	10,895.00	Y		
7) Gunners Protection Kit												
7.1) TOGPK 2.0 Production Units (11)(†)		2020	Rock Island Arsenal (13) / Rock Island, IL	MIPR	Rock Island, IL	Dec 2019	Oct 2020	261	40,000.00	Y		
7.2) RHGPK Production Units		2020	TBD / MARCORSYSCOM, Quantico, VA	C / FFP	Quantico, VA	Sep 2020	Feb 2021	26	35,000.00	N	Jul 2019	Jul 2019
† indicates the presence of a P-21												

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2	P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million	Aggregated Items: Wpns & Cmbt Vehs under \$5 million
Footnotes: ⁽¹²⁾ Annual Production Rates TBD, based on manufacturer chosen ⁽¹³⁾ TOGPK 2.0 production rates are based on market research.		

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million															Aggregated Items: Wpns & Cmbt Vehs under \$5 million									
Items (Units in Each)							Fiscal Year 2017													Fiscal Year 2018													BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
7) Gunners Protection Kit																																		
7.1) TOGPK 2.0 Production Units ⁽¹¹⁾																																		
	6	2020	NAVY		261	0	261																										261	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million										Aggregated Items: Wpns & Cmbt Vehs under \$5 million														
Items (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE			
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
7) Gunners Protection Kit																																		
7.1) TOGPK 2.0 Production Units ⁽¹¹⁾																																		
	6	2020	NAVY		261	0	261													A -	-	-	-	-	-	-	-	-	-	-	-	-	-	261
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2										P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million										Aggregated Items: Wpns & Cmbt Vehs under \$5 million												
Items <i>(Units in Each)</i>							Fiscal Year 2021										Fiscal Year 2022													BALANCE		
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP	
7) Gunners Protection Kit																																
7.1) TOGPK 2.0 Production Units ⁽¹¹⁾																																
	6	2020	NAVY		261	0	261	25	25	25	25	25	25	25	25	25	11															0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 2					P-1 Line Item Number / Title: 2220 / Wpns & Cmbt Vehs under \$5 million					Aggregated Items: Wpns & Cmbt Vehs under \$5 million			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)								
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder				
					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	Rock Island Arsenal ⁽¹³⁾ - Rock Island, IL	100	300	400	0	0	5	5	0	0	5	5	
"A" in the Delivery Schedule indicates the Contract Award Date. Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million). Footnotes: ⁽¹³⁾ TOGPK 2.0 production rates are based on market research.													

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 4: Other Support							P-1 Line Item Number / Title: 2061 / Modification Kits					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	717.332	19.778	22.904	22.760	0.000	22.760	37.635	45.271	56.646	57.782	-	980.108
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	717.332	19.778	22.904	22.760	0.000	22.760	37.635	45.271	56.646	57.782	-	980.108
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	717.332	19.778	22.904	22.760	0.000	22.760	37.635	45.271	56.646	57.782	-	980.108
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.362	-	-	-	-	-	-	-	-	-	0.362
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Weapons and combat vehicle improvements in the areas of survivability, lethality, mobility, command and control for the M1A1 tank and Improved Recovery Vehicle (IRV). Additionally, Engineering Change Proposals (ECPs) and upgrades address current and future reliability, sustainability, maintainability, and obsolescence issues to ensure mission readiness and effectiveness on the battlefield.												
M1A1 MOD KIT: The M1A1 Mod Kit line sustains and improves the technology of the M1A1 tank and Armored Vehicle Launched Bridge (AVLB). Funding supports the procurement, fielding, and testing of critical operational and safety related modifications used to enhance and maintain platform characteristics, such as reliability-availability-maintainability and in operationally relevant attributes relating to survivability, lethality, mobility, and command and control. Additionally, funding also supports items such as miscellaneous tools and test items that support these platforms.												
Assault Bridging Modernization Program: Replaces the legacy M60 armored vehicle and launching system of the current AVLB with the chassis of an M1A1 main battle tank, configured with a modern launching system, to support the launch and recovery of assault bridging in support of MAGTF maneuver. This program will establish commonality across the DoD fleet, eliminates obsolescence and diminishing manufacturing sources and materiel shortfall issues, while increasing the operational effectiveness and readiness of the MAGTF.												
IRV: The Improved Recovery Vehicle (also known as the M88A2 Hercules) is the Marine Air-Ground Task Force's heavy lift, recovery, and battlefield maintenance asset. This line is designed to sustain and improve the technology of the IRV. Funding supports the procurement, fielding, and testing of critical operational and safety related modifications used to enhance and maintain platform characteristics, such as reliability-availability-maintainability and in operationally relevant attributes relating to survivability, lethality, mobility, and command and control. Additionally, funding also supports items such as miscellaneous tools and test items that support the IRV.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	17.270	20.392	20.747	-	20.747	35.001	42.579	53.898	54.979		
NR	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	2.508	2.512	2.013	-	2.013	2.634	2.692	2.748	2.803		
Total:	Quantity	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 4: Other Support					P-1 Line Item Number / Title: 2061 / Modification Kits					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Secondary Distribution	Total Obligation Authority	19.778	22.904	22.760	-	22.760	37.635	45.271	56.646	57.782

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 4: Other Support						P-1 Line Item Number / Title: 2061 / Modification Kits				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Modification Kits	P-5a, P-21			- / 623.740	- / 15.918	- / 20.581	- / 20.139	- / -	- / 20.139
P-5	1 / M88A2 Hercules				13 / 93.592	- / 3.860	- / 2.323	- / 2.621	- / 0.000	- / 2.621
P-40	Total Gross/Weapon System Cost				- / 717.332	- / 19.778	- / 22.904	- / 22.760	- / 0.000	- / 22.760
*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: FY18 Base Appropriation Request: \$19.778M FY 2018 M1A1 MOD KIT \$15.918M: Active \$13.650M; Reserves \$2.268M: Funds supported modifications to the M1A1 Abrams tank (active and reserve components) to increase capabilities in survivability and lethality, specifically, to procure the Abrams Integrated Display and Targeting System (AIDATS) which will complete Full Rate Production (FRP). Modifications included Improved Side Armor (ISA), upgrades to the Gunner's Primary Sight Lower Panel, and transportability modifications to the Track Width Mine Plow (TWMP). FY 2018 IRV \$3.860M: Active \$3.620M; Reserves \$0.240M: Funds supported the procurement of modifications kits and associated Systems Technical Support addressing modernization and mitigating obsolescence for the M88A2. Funds also supported modification of tools and test equipment unique to the product office's portfolio of combat vehicles such as Direct Support Electrical Systems Test Set (DSESTS) and echeloned tool kits. FY19 Base Appropriation Request: \$22.904M FY 2019 M1A1 MOD KIT \$14.881: Active \$12.580M; Reserves \$2.301M: These funds support modifications to the M1A1 Abrams tank (active and reserve components) to increase capabilities in the operational attributes of survivability, lethality, mobility, and command and control. Funds support the procurement of efforts such as, Improved Side Armor (ISA), Gunner's Primary Sight Lower Panel (GPSLP), and Tactical Communications Modernization (TCM). ISA is a modification that significantly increases the survivability of the M1A1 tank. GPSLP is a modification to the tank's fire control system that enables the tank to fire two new types of ammunition being developed by the U.S. Army, increasing the lethality of the vehicle. TCM supports the procurement of new tactical radios to replace the obsolete AN/PRC 119 that is currently fielded, in order to meet the new capability requirement of a multi-band radio for the M1A1 tank by FY24. FY 2019 Assault Bridging Modernization \$5.7M: These funds support the procurement of 1 Test Article for the Assault Bridge which replaces the legacy M60 armored vehicle and launching system of the current AVLB with the chassis of an M1A1 main battle tank, configured with a modern launching system, to support the launch and recovery of assault bridging in support of MAGTF maneuver. FY 2019 IRV \$2.323M: Active \$2.112M; Reserves \$0.211M: These funds support the continued procurement of modification kits and associated systems technical support addressing modernization, sustainment, and obsolescence mitigation for the IRV platform. Additionally, this funding supports modifications to tools and test equipment unique to the product office's portfolio of combat vehicles, such as the Direct Support Electrical Systems Test Set (DSESTS) and echeloned tool kits.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 02: Weapons and combat vehicles / BSA 4: Other Support		P-1 Line Item Number / Title: 2061 / Modification Kits	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M	
Line Item MDAP/MAIS Code: N/A			
FY20 Base Appropriation Request: \$22.760M FY 2020 M1A1 MOD KIT \$14.439: Active \$12.641M; Reserves \$1.798M: These funds continue to support modifications to the M1A1 Abrams tank (active and reserve components) to increase capabilities in the operational attributes of survivability, lethality, mobility and command and control. Funds in support of survivability efforts allow for the procurement of Improved Side Armor (ISA) which significantly increases the survivability of the M1A1 tank. Funds in support of lethality efforts procure a new Gunner's Primary Sight Lower Panel (GPSLP). This modification to the tank's fire control system will enable the tank to fire two new types of ammunition being developed by the U.S. Army, increasing the lethality of the vehicle. Funds for the command and control effort procure communication systems as part of the Tactical Communications Modernization (TCM) effort. TCM procures new tactical radios to replace the obsolete AN/PRC 119 that is currently fielded, in order to meet the new capability requirement of a multi-band radio for the M1A1 tank by FY24. Funds for installation kits support the capabilities efforts of survivability, lethality, and command and control. These funds procure the cables, mounting hardware, installation material, and labor for the Abrams Integrated Display and Targeting System (AIDATS), ISA, and TCM installation process. The decrease from FY19 to FY20 is attributed to the reduction in level of effort for Command and Control which consists of Tactical Communication Modernization (TCM). Starting in FY20 M1A1 MOD KIT reflects various shifts in program funding to better align requirements to the operational attributes of survivability, lethality, mobility and command and control. The increase to Installation Kits is for the inclusion of AIDATS, ISA, TCM, and APS, which will vary annually based on depot level maintenance throughput at LOGCOM. Survivability was added to consolidate APS B-Kits, countermeasures, calibration kits and ISA which fluctuates due to throughput at the depot rebuild line. Lethality increased due to the shift of various upgrades modifications to include the ADL Increment II, the GPSLP in the FEP System, and improved proficiency of the Advances Gunnery Training System in the Tanks. Lethality also includes productions associated costs such as engineering spt., safety spt., and product spt., which were moved from engineering spt. and program management spt. moving forward. FY 2020 Assault Bridging Modernization \$5.7M: These funds support the procurement of 1 Production Article for the Assault Bridge which replaces the legacy M60 armored vehicle and launching system of the current AVLB with the chassis of an M1A1 main battle tank, configured with a modern launching system, to support the launch and recovery of assault bridging in support of MAGTF maneuver. FY 2020 IRV \$2.621M: Active \$2.406M; Reserves \$0.215M: These funds will support the continued procurement of modification kits and associated systems technical support addressing modernization, sustainment, and obsolescence mitigation for the IRV platform. Funding increase from FY19 to FY20 of \$.298M will support modifications to tools and test equipment unique to the product office's portfolio of combat vehicles, such as the Direct Support Electrical Systems Test Set (DSESTS) and echeloned tool kits. OCO: N/A			

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4							P-1 Line Item Number / Title: 2061 / Modification Kits								Aggregated Items Title: Modification Kits					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) M1A1 Modification Kits																				
1.1) Abrams Integrated Display and Targeting System ^(f)	A		83.821	184	15.423	61.280	82	5.025	-	-	-	-	-	-	-	-	-	-	-	-
1.2) Survivability - ISA ^{(1)(f)}	A		-	-	-	82.600	24	1.982	82.600	15	1.239	-	-	-	-	-	-	-	-	-
1.3) Survivability Reserve - ISA ^(f)	A		-	-	-	82.600	16	1.322	82.600	11	0.908	-	-	-	-	-	-	-	-	-
1.4) Program Management Support ⁽²⁾			-	-	9.894	-	-	1.254	-	-	1.280	-	-	-	-	-	-	-	-	-
1.5) Engineering Support	A		-	-	2.810	-	-	0.381	-	-	0.349	-	-	-	-	-	-	-	-	-
1.6) Installation Kits ⁽³⁾	A		-	-	2.517	-	-	0.845	-	-	0.887	-	-	4.126	-	-	-	-	-	4.126
1.7) Installation Kits - Reserve ⁽⁴⁾	A		-	-	0.300	-	-	0.186	-	-	-	-	-	0.298	-	-	-	-	-	0.298
1.8) Lethality ⁽⁵⁾	A		-	-	-	-	-	1.989	-	-	2.089	-	-	4.021	-	-	-	-	-	4.021
1.9) Lethality - Reserve ⁽⁶⁾	A		-	-	-	-	-	0.775	-	-	0.096	-	-	-	-	-	-	-	-	-
1.10) Specialized Equipment ⁽⁷⁾	A		-	-	-	-	-	0.825	-	-	1.100	-	-	-	-	-	-	-	-	-
1.11) Specialized Equipment - Reserve	A		-	-	-	-	-	0.760	-	-	-	-	-	-	-	-	-	-	-	-
1.12) Command and Control ⁽⁸⁾	A		-	-	-	-	-	0.574	-	-	5.636	-	-	2.635	-	-	-	-	-	2.635
1.13) Command and Control - Reserve	A		-	-	-	-	-	-	-	-	1.297	-	-	1.500	-	-	-	-	-	1.500
1.16) Survivability ⁽⁹⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.859	-	-	-	-	-	1.859
Subtotal: 1) M1A1 Modification Kits			-	-	30.944	-	-	15.918	-	-	14.881	-	-	14.439	-	-	-	-	-	14.439
2) Prior Year Cumulative Funding																				
2.1) Other Prior Year	A		-	-	592.796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) Prior Year Cumulative Funding			-	-	592.796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) Assault Bridging Modernization																				
3.1) Assault Bridging Modernization ⁽¹⁰⁾	A		-	-	-	-	-	-	-	-	5.700	-	-	5.700	-	-	-	-	-	5.700
Subtotal: 3) Assault Bridging Modernization			-	-	0.000	-	-	-	-	-	5.700	-	-	5.700	-	-	-	-	-	5.700
Total			-	-	623.740	-	-	15.918	-	-	20.581	-	-	20.139	-	-	-	-	-	20.139
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: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4	P-1 Line Item Number / Title: 2061 / Modification Kits	Aggregated Items Title: Modification Kits

(†) indicates the presence of a P-5a

Footnotes:

(1) FY19 unit cost adjusted to reflect actual unit price for both active and reserve funding.

(2) In FY20 product support is being consolidated under the production lines (lethality, survivability, communication, mobility)

(3) Increase in FY20 due to the inclusion of AIDATS, ISA, TCM, and APS in the consolidated cost category for installation kits for FY20 and beyond. Installation cost will vary based on throughput at the rebuild line and fielding plan of the operational forces.

(4) Increase in FY20 due to the inclusion of AIDATS, ISA, TCM, and APS in the consolidated cost category for installation kits for FY20 and beyond. Installation will vary annually based on depot level maintenance throughput at LOGCOM.

(5) The increase in FY20 for Lethality consolidates upgrade modifications to the ADL Increment II, the Gunners Primary Sight Lower Panel in the FEP System which is part of the implementation of ADL II, and improves proficiency of the Advanced Gunnery Training System in the Tanks. Also included in this line are costs associated with production items such as engineering spt, safety support, and product support.

(6) Lethality consolidates upgrade modifications to the ADL Increment II, Gunners Primary Sight Lower Panel in the FEP System which is part of the implementation of ADL II, and to improve proficiency of the Advanced Gunnery Training System in the Tanks. Also included in this line are costs associated with production items such as engineering spt, safety support, and product support.

(7) Procured AIDATS and TCSH Cables and Brackets, TWMP Tie Down, Rear View Mirror Sensor, Cables, Driver Viewing Enhancement (DVE) in both active and reserve funding.

(8) Communication Modernization was changed to Command and Control to better align with program description. Consists of Tactical Communication Modernization (TCM) radio procurement for both active and reserve funding.

(9) Beginning in FY20 Survivability consists of APS B-Kits, countermeasures, calibration kits; and Improved Side Armor to align with the program description.

(10) FY19 procured 1 test article; FY20 procures 1 production article

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4				P-1 Line Item Number / Title: 2061 / Modification Kits					Aggregated Items: Modification Kits			
Item Number / Title [DODIC]	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 (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) M1A1 Modification Kits												
1.1) Abrams Integrated Display and Targeting System ^(†)		2016	Raytheon / McKinney, TX	C / FFP	MCSC, Quantico, VA	Aug 2016	Oct 2018	40	173.250	N	Jan 2014	Mar 2014
1.1) Abrams Integrated Display and Targeting System ^(†)		2017	Raytheon / McKinney, TX	C / FFP	MCSC, Quantico, VA	Aug 2017	Dec 2018	144	58.976	N	Jan 2014	Mar 2014
1.1) Abrams Integrated Display and Targeting System ^(†)		2018	Raytheon / McKinney, TX	C / FFP	MCSC, Quantico, VA	Aug 2018	May 2019	82	61.280	N	Jan 2014	Mar 2014
1.2) Survivability - ISA ⁽¹⁾		2018	TACOM@Warren, MI / Warren, MI	MIPR	TACOM, Warren, MITACOM, Warren, MI	Jun 2018	Mar 2019	24	82.600	N	Jun 2017	Jul 2017
1.2) Survivability - ISA ⁽¹⁾		2019	TACOM@Warren, MI / Warren, MI	MIPR	TACOM, Warren, MITACOM, Warren, MI	Feb 2019	Nov 2019	15	82.600	N	Jun 2017	Jul 2017
1.3) Survivability Reserve - ISA		2018	TACOM, Warren, MI@Warren, MI / Warren, MI	MIPR	TACOM, Warren MITACOM, Warren MI	Jun 2018	Mar 2019	16	82.600	N	Jun 2017	Jul 2017
1.3) Survivability Reserve - ISA		2019	TACOM, Warren, MI@Warren, MI / Warren, MI	MIPR	TACOM, Warren MI	Feb 2019	Nov 2019	11	82.600	N	Jun 2017	

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4							P-1 Line Item Number / Title: 2061 / Modification Kits															Aggregated Items: Modification Kits												
Items (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												B A L A N C E			
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016												Calendar Year 2017															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
1) M1A1 Modification Kits																																		
1.1) Abrams Integrated Display and Targeting System																																		
	7	2016	NAVY	40	0	40													A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
	7	2017	NAVY	144	0	144																									A	-	-	144
	7	2018	NAVY	82	0	82																											82	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4										P-1 Line Item Number / Title: 2061 / Modification Kits													Aggregated Items: Modification Kits											
Items <i>(Units in Each)</i>							Fiscal Year 2018												Fiscal Year 2019													BALANCE		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018												Calendar Year 2019															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
1) M1A1 Modification Kits																																		
1.1) Abrams Integrated Display and Targeting System																																		
	7	2016	NAVY	40	0	40	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	4	4	4	4	0		
	7	2017	NAVY	144	0	144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	12	12	12	12	12	12	12	12	12	24		
	7	2018	NAVY	82	0	82													A	-	-	-	-	-	-	-	-	-	9	9	9	9	9	37
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4							P-1 Line Item Number / Title: 2061 / Modification Kits													Aggregated Items: Modification Kits												
Items <i>(Units in Each)</i>							Fiscal Year 2020										Fiscal Year 2021										BALANCE					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020										Calendar Year 2021															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P	
1) M1A1 Modification Kits																																
1.1) Abrams Integrated Display and Targeting System																																
	7	2016	NAVY	40	40	0																										0
	7	2017	NAVY	144	120	24	12	12																								0
	7	2018	NAVY	82	45	37	9	9	9	10																					0	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P		

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4					P-1 Line Item Number / Title: 2061 / Modification Kits				Aggregated Items: Modification Kits			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Raytheon - McKinney, TX	12	108	400	0	0	9	9	0	0	9	9

"A" in the Delivery Schedule indicates the Contract Award Date.

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

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4						P-1 Line Item Number / Title: 2061 / Modification Kits						Item Number / Title [DODIC]: 1 / M88A2 Hercules									
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				13			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				93.592			3.860			2.323			2.621			0.000			2.621		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				93.592			3.860			2.323			2.621			0.000			2.621		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				93.592			3.860			2.323			2.621			0.000			2.621		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				7,199.385			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)			
Hardware Cost																					
Recurring Cost																					
1.1.1) M88A2 Hercules	5,791.615	13	75.291	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
1.1.2) Mod Kits (Various Types of Kits)	-	-	7.144	-	-	0.927	-	-	0.644	-	-	0.695	-	-	0.000	-	-	0.695			
1.1.3) Mod Kits (Various Types of Kits) - Reserve	-	-	0.828	-	-	0.033	-	-	0.201	-	-	0.205	-	-	0.000	-	-	0.205			
1.1.4) Computer Refresh ⁽¹¹⁾	-	-	0.000	-	-	0.662	-	-	0.160	-	-	0.000	-	-	0.000	-	-	0.000			
1.1.5) Computer Refresh - Reserve	-	-	0.000	-	-	0.010	-	-	0.010	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	83.263	-	-	1.632	-	-	1.015	-	-	0.900	-	-	0.000	-	-	0.900			
Subtotal: Hardware Cost	-	-	83.263	-	-	1.632	-	-	1.015	-	-	0.900	-	-	0.000	-	-	0.900			
Support Cost																					
2.1) M88A2 Hercules System Technical Support Contract	-	-	5.048	-	-	1.320	-	-	1.188	-	-	1.370	-	-	0.000	-	-	1.370			
2.2) M88A2 Hercules System Technical Support Contract - Reserve	-	-	0.153	-	-	0.197	-	-	0.000	-	-	0.010	-	-	0.000	-	-	0.010			
2.3) DSESTS	-	-	5.128	-	-	0.711	-	-	0.120	-	-	0.341	-	-	0.000	-	-	0.341			
Subtotal: Support Cost	-	-	10.329	-	-	2.228	-	-	1.308	-	-	1.721	-	-	0.000	-	-	1.721			

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 02 / 4						P-1 Line Item Number / Title: 2061 / Modification Kits						Item Number / Title [DODIC]: 1 / M88A2 Hercules						
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	7,199.385	13	93.592	-	-	3.860	-	-	2.323	-	-	2.621	-	-	0.000	-	-	2.621

Footnotes:

⁽¹¹⁾ In FY19 the M88 Hercules computers were fully procured to maximize economies of scale for both active and reserve funding.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles							P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	112.217	10.026	18.334	175.998	0.000	175.998	267.976	238.980	233.442	238.127	21.675	1,316.775
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	112.217	10.026	18.334	175.998	0.000	175.998	267.976	238.980	233.442	238.127	21.675	1,316.775
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	112.217	10.026	18.334	175.998	0.000	175.998	267.976	238.980	233.442	238.127	21.675	1,316.775
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Ground Based Air Defense supports the Low Altitude Air Defense (LAAD) Battalion's missions of Short Range Air Defense (SHORAD) and provides the Marine Air Ground Task Force (MAGTF) to include; Bases, Posts and Stations, the necessary Force Protection to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission, to include hostile aerial threats from Unmanned Aerial Systems (UAS). With the proliferation of both military and commercial UAS platforms, the program is pursuing and acquiring more lethal and survivable GBAD Future Weapons System platforms; such as JLTV's with armored protection and better maneuverability than a HMMWV, providing increased Counter-UAS capabilities now and continually spiraling out increasing capability for the foreseeable future. Ground Based Air Defense-Future Weapon System (GBAD-FWS): Recognizing that organic GBAD capability was being over matched by UAS proliferation, four GBAD capability gaps have been identified. In response to these defense gaps, the concept of an evolutionary GBAD FWS was developed. The GBAD FWS capability is being developed in three increments. Increment 1 modernizes the existing GBAD legacy systems (AMANPADS) by mounting a mix of legacy and technologically mature capabilities (from UUNS achievements) onto Joint Light Tactical Vehicles (JLTV), mitigating the risk of attacks from UAS and Fixed-wing or Rotary-wing (FW/RW) aircraft, while maintaining pace with maneuver forces. The Marine Air Defense Integrated System (MADIS) Increment 1 (Inc 1) will be accomplished with the procurement and installation of Government Furnished C-UAS Equipment on a Joint Light Tactical Vehicle (JLTV) beginning in FY20. MADIS Increment 2 will focus on extended range for the Increment 1 system as well as kinetic and non kinetic capability. In order to deliver this mission critical capability more rapidly to address emerging hostile threats from Cruise Missiles in a Peer, Near Peer Competitor Environment, an initial Medium Range Intercept capability, Inc 3, will begin procurement in FY21. Inc 3 will be comprised of missile launchers, intercept missiles, and a Command and Control (C2) system that will be compatible and integrated with CAC2S and Ground/Air Task Oriented Radar (G/ATOR), as well as, be able to operate on Marine Corps and Joint Integrated Air Defense System networks. Ground Based Air Defense-Transformation/Stinger Sustainment (GBAD-T/GBAD-SS): The Advanced Man-Portable Air Defense System (A-MANPADS) Fire Unit is a mobile, Stinger missile-based low altitude surface-to-air weapons system designed to provide close-in short range air defense. A-MANPADS assets are organic to the Low Altitude Air-Defense (LAAD) Battalion of the Marine Air Control Group (MACG). LAAD Battalions support the Marine Air Ground Task Force by defending forward combat areas, maneuver forces, vital areas and installations, and units engaged in special or independent operations. The LAAD Battalion consists of a headquarters and two A-MANPADS firing batteries. Each firing battery, in turn, consists of a battery headquarters and two A-MANPADS firing platoons. Firing platoons include a platoon headquarters and three firing sections, the smallest tactical units of the LAAD Battalion. The A-MANPADS Section is comprised of a Section Leader and five Fire Units. The Section Leader oversees the deployment of the Fire Units and directs their fires in support of the overall air defense plan. With the GBAD program rapidly approaching the out of production phase for the A-MANPADS and the end of life for the Stinger missile, a major service-life extension was conducted in order to mitigate the potential gap between the current and follow-on weapon system. Additionally, from FY18-20, GBAD is procuring the replacement of the Identification Friend or Foe (IFF) Belt Pack (AN/PPX-3B). The IFF Belt Pack will provide the Marines the Mode 5 capability that is required to be met by 4QFY20.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles						P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Ground Based Air Defense (GBAD)	P-5a, P-21			- / 112.217	- / 10.026	- / 18.334	- / 175.998	- / 0.000	- / 175.998
P-40	Total Gross/Weapon System Cost				- / 112.217	- / 10.026	- / 18.334	- / 175.998	- / 0.000	- / 175.998
*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 Appropriation Request: Ground Based Air Defense-Transformation (GBAD-T) \$10.026M - FY18 funding supported continued A-MANPADS upgrades and purchase of MODi Vehicle Power Adapters (MVPA) to support Counter-UAS efforts. FY 2019 Baseline Appropriation Request: \$18.334M - FY19 funding supports the procurement of Identification Friend or Foe (IFF) Mode V belt packs. The increase from FY18 to FY19 of \$8.308M, provides for the initial procurement of 157 Identification Friend or Foe (IFF) Mode V Belt Packs and associated support. FY 2020 Baseline Appropriation Request: \$175.998M Ground Based Air Defense-Stinger Sustainment \$18.622M - Will fund the second and final procurement of a total of 175 Identification Friend or Foe (IFF) Mode V belt packs. Ground Based Air Defense- Future Weapon Systems (GBAD-FWS) \$157.376M - FY20 funding will provide for initial procurement of Marine Air Defense Integrated System Increment (MADIS Inc 1) JLTV systems, an increase from 0 to 28 vehicles. Also included is an increase from 0 to 1 Expeditionary MADIS C-UAS System, to support critical infrastructure at bases, posts or stations. FY20 also funds an increase from 0 to 162 for the Night Sight Replacement to support equipment reaching obsolescence. The Night Sight will enable Marines to perform target acquisition during day or night, during reduced visibility conditions and when engaging low observable targets. The increase of \$157.664M from FY19 to FY20 is due to the migration of the MADIS Inc 1 from the development phase to the production and deployment phase.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1						P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)							Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				112.217		10.026		18.334		175.998		0.000		175.998				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				112.217		10.026		18.334		175.998		0.000		175.998				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				112.217		10.026		18.334		175.998		0.000		175.998				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.3) Advanced ManPads Integration (A-MANPADS) FUV Recurring ^(t)	-	-	-	179,875.00	16	2.878	-	-	-	-	-	-	-	-	-	-	-	
1.1.4) Advanced ManPads (A-MANPADS) Prior Years Cumulative Funding	-	-	27.680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.1.5) Stinger Service Life Extension Program (SLEP) Recurring ^(t)	45,621.15	1,135	51.780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.1.6) Stinger Service Life Extension Program (SLEP) Cumulative Funding	-	-	18.621	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.1.7) Marine Air Defense Integrated System (MADIS Inc 1) ^{(t) (1)}	-	-	-	-	-	-	-	-	-	4,732K	28	132.492	-	-	-	4,732K	28	
1.1.8) Identification Friend or Foe (IFF) Recurring ^{(t) (2)}	-	-	-	-	-	-	114,590.43	157	17.991	104,371.43	175	18.265	-	-	-	104,371.43	175	
Subtotal: Recurring Cost	-	-	98.081	-	-	2.878	-	-	17.991	-	-	150.757	-	-	-	-	-	

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1						P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)							Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)					
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
Non Recurring Cost																		
1.2.2) Advanced ManPads Integration (A-MANPADS) Non-Recurring ⁽³⁾	-	-	0.308	-	-	0.020	-	-	-	-	-	-	-	-	-	-	-	-
1.2.3) MODi Vehicle Power Amplifiers (MVPA) Non-Recurring ⁽⁴⁾	-	-	-	-	-	7.128	-	-	-	-	-	-	-	-	-	-	-	-
1.2.5) Night Sight Replacement ^(†)	-	-	-	-	-	-	-	-	-	75,401.23	162	12.215	-	-	-	75,401.23	162	12.215
1.2.6) MCICOM CUAS DUNS Sites ^(†) ⁽⁵⁾	-	-	-	-	-	-	-	-	-	4,188K	1	4.188	-	-	-	4,188K	1	4.188
1.2.7) MADIS ECO's/ Increased Lethality Components ⁽⁶⁾	-	-	-	-	-	-	-	-	-	-	-	3.909	-	-	-	-	-	3.909
1.2.8) GBAD Prior Years Flyaway/Non Recurring Cumulative Funding	-	-	9.532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	9.840	-	-	7.148	-	-	-	-	-	20.312	-	-	-	-	-	20.312
Subtotal: Flyaway Cost	-	-	107.921	-	-	10.026	-	-	17.991	-	-	171.069	-	-	-	-	-	171.069
Support Cost																		
2.1) MADIS Logistics Support ⁽⁷⁾	-	-	-	-	-	-	-	-	-	-	-	4.572	-	-	-	-	-	4.572
2.2) Identification Friend or Foe (IFF) Support	-	-	-	-	-	-	-	-	0.343	-	-	0.357	-	-	-	-	-	0.357
2.3) GBAD Prior Years Cumulative Support Funding	-	-	4.296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	-	-	4.296	-	-	-	-	-	0.343	-	-	4.929	-	-	-	-	-	4.929
Gross/Weapon System Cost	-	-	112.217	-	-	10.026	-	-	18.334	-	-	175.998	-	-	0.000	-	-	175.998
(†) indicates the presence of a P-5a																		
Footnotes:																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1	P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)	Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(1) Marine Air Defense Integrated System Increment 1 (MADIS Inc 1) is the procurement and installation of Government Furnished Equipment on a Joint Light Tactical Vehicle (JLTV) in order to mitigate the risk of attacks from UAS and FW/RW aircraft. GFE Components include Fire Control Optics, EOIR Optics, RlwP Turrets, drone on drone defeat capability, Modi, Mobile Vehicle Power Amplifier (MVPA), SkyView, C2 components, and a radar. (2) The two year procurement of IFF Mode V belt packs has been accelerated based on guidance provided in JROCM 047-07. (3) FUV production was completed in FY18. (4) MODI Vehicle Power Amplifiers are existing Marine Corps Stock Items that support GBAD Counter-UAS current efforts. (5) The Marine Corps will procure and install a C-UAS/GBAD capability at a Base, Post or Station every year across the FYDP beginning in FY20. (6) MADIS ECO's includes the procurement and retrofit of various components, such as optics and kinetic capabilities, for both MADIS Inc 1 as well as MCICOM DUNS Sites to support increased lethality and adapt to the continually evolving threat and technologies . (7) Provide CLS/ICLS for MADIS Inc 1, MADIS Inc 2, and MCICOM DUNS Sites. Due to the commercial nature of the C-UAS components CLS will be used during the testing phase and a combination of CLS/ICLS will support the systems after fielding.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1			P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)						Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)			
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
1.1.3) Advanced ManPads Integration (A-MANPADS) FUV Recurring ^(†)		2018	NSWC, Crane / Crane, IN	SS / FFP	US Navy, Crane, IN	Jan 2018	Jul 2018	16	179,875.00	Y		Oct 2015
1.1.5) Stinger Service Life Extension Program (SLEP) Recurring ^(†)		2015	Raytheon, Tuscon, AZ / USARMY Huntsville, AL	SS / FFPLOE	US Army, Huntsville, AL	Apr 2015	Jan 2017	631	46,387.79	Y		Feb 2012
1.1.5) Stinger Service Life Extension Program (SLEP) Recurring ^(†)		2016	Raytheon, Tuscon, AZ / USARMY Huntsville, AL	SS / FFPLOE	US Army, Huntsville, AL	Dec 2015	Sep 2017	84	46,387.79	Y		Feb 2012
1.1.7) Marine Air Defense Integrated System (MADIS Inc 1) ^(†)		2020	NSWC, Crane / Crane,IN	MIPR	US NAVy, Crane,IN	Jan 2020	Jun 2020	28	4,732K	Y		Sep 2019
1.1.8) Identification Friend or Foe (IFF) Recurring ^(†)		2019	USARMY / Aberdeen Proving Ground, MD	C / FFP	Aberdeen Proving Ground, MD	Mar 2019	Mar 2020	157	114,590.43	Y		Mar 2017
1.2.5) Night Sight Replacement ^(†)		2020	TBD / TBD	C / TBD	MCSC, Quantico	Dec 2019	Jun 2020	162	75,401.23	N		Jun 2019
1.2.6) MCICOM CUAS DUNS Sites		2020	NSWC, Crane / Crane, IN	MIPR	US Navy, Crane, IN	Jan 2020	Sep 2020	1	4,188K	Y		Oct 2019

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)													Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)											
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2015												Fiscal Year 2016												BALANCE			
OCCO	MFR#	FY	SERVICE	PROCQTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015												Calendar Year 2016															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1.1.3) Advanced ManPads Integration (A-MANPADS) FUV Recurring																																		
	1	2018	NAVY	16	0	16																							16					
1.1.5) Stinger Service Life Extension Program (SLEP) Recurring																																		
Prior Years Deliveries: 420																																		
	2	2015	NAVY	631	0	631											A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	631		
	2	2016	NAVY	84	0	84															A	-	-	-	-	-	-	-	-	-	-	-	-	84
1.1.7) Marine Air Defense Integrated System (MADIS Inc 1) ⁽¹⁾																																		
	3	2020	NAVY	28	0	28																							28					
1.1.8) Identification Friend or Foe (IFF) Recurring ⁽²⁾																																		
	4	2019	NAVY	157	0	157																							157					
1.2.5) Night Sight Replacement																																		
	5	2020	NAVY	162	0	162																							162					
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)										Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2017												Fiscal Year 2018												BALANCE		
OCO#	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1.1.3) Advanced ManPads Integration (A-MANPADS) FUV Recurring																																	
	1	2018	NAVY		16	0	16													A -	-	-	-	-	-	-	16						0
1.1.5) Stinger Service Life Extension Program (SLEP) Recurring																																	
Prior Years Deliveries: 420																																	
	2	2015	NAVY		631	0	631	-	-	-	55	55	55	55	55	55	55	85	85	21													0
	2	2016	NAVY		84	0	84	-	-	-	-	-	-	-	-	-	-	5	5	64	10											0	
1.1.7) Marine Air Defense Integrated System (MADIS Inc 1) ⁽¹⁾																																	
	3	2020	NAVY		28	0	28																										28
1.1.8) Identification Friend or Foe (IFF) Recurring ⁽²⁾																																	
	4	2019	NAVY		157	0	157																										157
1.2.5) Night Sight Replacement																																	
	5	2020	NAVY		162	0	162	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	162	

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)													Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)								
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2019												Fiscal Year 2020												BALANCE
OCCO	MFR#	FY	SERVICE	PROCQTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1.1.3) Advanced ManPads Integration (A-MANPADS) FUV Recurring																									0						
1	2018	NAVY		16	16	0																			0						
1.1.5) Stinger Service Life Extension Program (SLEP) Recurring																															
Prior Years Deliveries: 420																															
2	2015	NAVY		631	631	0																			0						
2	2016	NAVY		84	84	0																			0						
1.1.7) Marine Air Defense Integrated System (MADIS Inc 1) ⁽¹⁾																															
3	2020	NAVY		28	0	28													A -	-	-	-	-	7	7	7	7	0			
1.1.8) Identification Friend or Foe (IFF) Recurring ⁽²⁾																															
4	2019	NAVY		157	0	157					A -	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	52			
1.2.5) Night Sight Replacement																															
5	2020	NAVY		162	0	162													A -	-	-	-	-	-	20	20	20	20	82		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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LI 3006 - Ground Based Air Defense (GBAD)
Navy

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1				P-1 Line Item Number / Title: 3006 / Ground Based Air Defense (GBAD)				Item Number / Title [DODIC]: 1 / Ground Based Air Defense (GBAD)			

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	NSWC, Crane - Crane, IN	16	32	64	0	4	6	10	0	3	6	9
2	Raytheon, Tuscon, AZ - USARMY Huntsville, AL	64	640	1,280	0	4	24	28	0	3	21	24
3	NSWC, Crane - Crane, IN	18	36	48	0	4	5	9	0	4	5	9
4	USARMY - Aberdeen Proving Ground, MD	100	180	360	0	6	12	18	0	6	12	18
5	TBD - TBD	150	240	360	0	0	6	6	0	0	1	1

"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: PB 2020 Navy					Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles					P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin				
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	1,788	233	5	97	-	97	114	1	3	3	Continuing	Continuing
Gross/Weapon System Cost <i>(\$ in Millions)</i>	287.858	37.555	3.020	20.207	0.000	20.207	19.883	1.049	2.432	2.480	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	287.858	37.555	3.020	20.207	0.000	20.207	19.883	1.049	2.432	2.480	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	287.858	37.555	3.020	20.207	0.000	20.207	19.883	1.049	2.432	2.480	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost <i>(\$ in Thousands)</i>	160.994	161.180	604.000	208.320	-	208.320	174.412	1,049.000	810.667	826.667	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	160.994	161.180	604.000	208.320	-	208.320	174.412	1,049.000	810.667	826.667	Continuing	Continuing

Description:

Javelin provides the US Army and USMC a man-portable, fire-and-forget, medium-range missile with enhanced situational awareness and precision direct-fire effects to defeat armored vehicles, fortifications and soft targets in full spectrum operations. Javelin has a high kill rate against a variety of targets at extended ranges under day/night, battlefield obscurants, adverse weather and multiple counter-measure conditions. The system's soft launch feature permits firing from a fighting position or an enclosure. Javelin uses a modular design to allow the system to evolve to meet changing threats and requirements via both software and hardware upgrades. The system consists of a reusable Command Launch Unit (CLU) with a built-in-test (BIT), and a modular missile encased in a disposable launch tube assembly. The system also includes training devices for tactical training and classroom training. Javelin's fire-and-forget technology allows the gunner to fire again without the need to track targets. The Javelin provides enhanced lethality through the use of a tandem warhead which will defeat all current armor threats. It is effective against both stationary and moving targets. This system also provides defensive capability against attacking/hovering helicopters. The performance improvements in current production Javelin Block I CLUs are: increased target identification range, increased surveillance time with new battery and software management and external RS-170 interface for video output. The performance improvements in current production Javelin Block I missiles are: increased probability of hit/kill at 2500m, improved warhead lethality, and reduced time of flight. The CLU is being used as a stand-alone surveillance and target acquisition asset. The Army is the lead for this joint program with the USMC.

[P5 / Guided Missiles]: The unit price per missile is determined by the demand in production quantities per year through foreign military sales and combined service bulk purchases of 850 missiles for the option year. Missile quantities are accurate on P-5 through the FYDP. The quantities on the P-40 will be updated for the President's Budget submission.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	233	5	97	-	97	114	1	3	3
	Total Obligation Authority	37.381	2.853	20.025	-	20.025	19.698	0.898	2.257	2.301
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.174	0.167	0.182	-	0.182	0.185	0.151	0.175	0.179
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	37.555	3.020	20.207	-	20.207	19.883	1.049	2.432	2.480

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles						P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin				
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / JAVELIN	P-5a, P-21			1,788 / 287.858	233 / 37.555	5 / 3.020	97 / 20.207	- / 0.000	97 / 20.207
P-40	Total Gross/Weapon System Cost				1,788 / 287.858	233 / 37.555	5 / 3.020	97 / 20.207	- / 0.000	97 / 20.207
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The unit price per missile is determined by the demand in production quantities per year through foreign military sales and combined service bulk purchases. FY 2018 Base Appropriation Request: \$35.026M (Active \$34.852M, Reserve \$0.174M) Guided Missiles - Javelin - Funding supports the procurement of 206 Javelin missiles to replenish inventory due to end of life service conditions. Funding also provides for engineering and logistics support of the Javelin system, updating of reserve equipment, and program management support. FY 2019 Base Appropriation Request: \$3.020M (Active \$2.853M, Reserve \$0.167M) Guided Missiles - Javelin - Funding supports the procurement of 11 Javelin missiles to replenish inventory due to end of life service conditions; 6 missiles, in addition to the quantity of 5 listed in the FY19 Procurement Quantity above, are achieved through cost savings in program management support. Funding also provides for engineering and logistics support of the Javelin system, the updating of reserve equipment, and program management support. The reduction of \$34.535M from FY 2018 to FY 2019 prevents the procurement of additional missile quantities required to support the Marine Corps Force Restructure changes, which will increase Javelin systems from 4 to 8 per infantry battalion by FY 2025. The unit cost increase of approximately \$.008M from FY 2018 to FY 2019 is due to inflation and the quantity decrease of 195 units. FY 2020 Base Appropriation Request: \$20.207M (Active \$20.025M, Reserve \$0.182M) Guided Missiles - Javelin - Funding supports the procurement of 97 Javelin missiles to replenish inventory due to end of life service conditions. Funding also provides for engineering and logistics support of the Javelin system, updating of reserve equipment, and program management support. The funding increase of \$17.187M from FY 2019 to FY 2020 is required to procure an additional 97 missiles to meet the Total Munitions Requirement (TMR). Funding also provides engineering and logistics support of the Javelin system, updating of reserve equipment, and program management support. Estimated unit prices are not based on unit cost growth, but on the combined missile procurements of the United States Army, Foreign Military Sales, and other services of 850 missiles per year. OCO: FY 2018 Overseas Contingency Operations (OCO) Request: \$2.529M Guided Missiles - Javelin - Funding supports replenishment of 8 Javelin missiles used in combat operations in theater as well as training specific ammunition for units in direct support of operations. Funding will also provide for engineering, logistics and program management required to place Javelin missiles in service.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1						P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin						Item Number / Title [DODIC]: 1 / JAVELIN							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total					
Procurement Quantity (Units in Each)				1,788		233		5		97		-		97					
Gross/Weapon System Cost (\$ in Millions)				287.858		37.555		3.020		20.207		0.000		20.207					
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Net Procurement (P-1) (\$ in Millions)				287.858		37.555		3.020		20.207		0.000		20.207					
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Total Obligation Authority (\$ in Millions)				287.858		37.555		3.020		20.207		0.000		20.207					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares (\$ in Millions)				-		-		-		-		-		-					
Gross/Weapon System Unit Cost (\$ in Thousands)				160.994		161.180		604.000		208.320		-		208.320					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																			
Recurring Cost																			
1.1.1) Guided Missiles ^(†) (1)		148.337	1,857	275.461	166.104	206	34.217	174.083	11	1.915	177.565	97	17.224	-	-	-	177.565	97	17.224
1.1.2) Recurring Missile Surcharge		-	-	1.637	-	-	1.621	-	-	0.097	-	-	0.866	-	-	-	-	-	0.866
1.1.3) Government Engineering Services		-	-	6.831	-	-	1.682	-	-	0.416	-	-	1.067	-	-	-	-	-	1.067
1.1.4) Government Program Management		-	-	3.504	-	-	0.035	-	-	0.425	-	-	0.868	-	-	-	-	-	0.868
1.1.5) Reserves- Training Equipment		-	-	0.425	-	-	-	-	-	0.167	-	-	0.182	-	-	-	-	-	0.182
Subtotal: Recurring Cost		-	-	287.858	-	-	37.555	-	-	3.020	-	-	20.207	-	-	-	-	-	20.207
Subtotal: Flyaway Cost		-	-	287.858	-	-	37.555	-	-	3.020	-	-	20.207	-	-	-	-	-	20.207
Gross/Weapon System Cost		160.994	1,788	287.858	161.180	233	37.555	604.000	5	3.020	208.320	97	20.207	-	-	0.000	208.320	97	20.207
^(†) indicates the presence of a P-5a																			
Footnotes:																			
⁽¹⁾ The estimated missile unit price for FY18 has been updated to reflect the current cost for the Spiral II F-Model missile variant. The increase in unit price per missile in FY19 and FY20 is based on a Government Estimate for the procurement of the Spiral II F-Model missile variant.																			

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1				P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin					Item Number / Title [DODIC]: 1 / JAVELIN			
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 (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Guided Missiles ^(†)		2016	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	Apr 2016	Sep 2018	350	144.505	Y		
1.1.1) Guided Missiles ^(†)	✓	2016	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	Apr 2016	Sep 2018	48	144.505	Y		
1.1.1) Guided Missiles ^(†)		2017	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	Jul 2017	May 2019	522	143.818	Y		
1.1.1) Guided Missiles ^(†)	✓	2017	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	Jul 2017	May 2019	9	149.532	Y		
1.1.1) Guided Missiles ^(†)		2018	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	Jun 2018	Apr 2020	198	166.104	Y		
1.1.1) Guided Missiles ^(†)	✓	2018	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	Jun 2018	Apr 2020	8	166.104	Y		
1.1.1) Guided Missiles ^(†)		2019	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	May 2019	Mar 2021	11	174.083	Y		
1.1.1) Guided Missiles ^(†)		2020	JJV All Up Round ⁽²⁾ / Tucson AZ Orlando FL	SS / FFP	AMCOM, Redstone Arsenal, AL	May 2020	Mar 2022	97	177.565	Y		

^(†) indicates the presence of a P-21

Footnotes:

⁽²⁾ Javelin Joint Venture (JJV) includes Raytheon in Tucson, AZ and Lockheed Martin in Orlando, FL.

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin										Item Number / Title [DODIC]: 1 / JAVELIN																													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2016										Fiscal Year 2017													BALANCE																			
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016										Calendar Year 2017																																
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP																		
1.1.1) Guided Missiles ⁽¹⁾																																																	
Prior Years Deliveries: 928																																																	
	1	2016	NAVY	350	0	350							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350																	
✓	1	2016	NAVY	48	0	48							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48																	
	1	2017	NAVY	522	0	522																						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	522						
✓	1	2017	NAVY	9	0	9																						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9					
	1	2018	NAVY	198	0	198																																											198
✓	1	2018	NAVY	8	0	8																																											8
	1	2019	NAVY	11	0	11																																											11
	1	2020	NAVY	97	0	97																																											97
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP																			

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin										Item Number / Title [DODIC]: 1 / JAVELIN															
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2018										Fiscal Year 2019														BALANCE				
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019																		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
1.1.1) Guided Missiles ⁽¹⁾																																			
Prior Years Deliveries: 928																																			
	1	2016	NAVY	350	0	350	-	-	-	-	-	-	-	-	-	-	-	350															0		
✓	1	2016	NAVY	48	0	48	-	-	-	-	-	-	-	-	-	-	-	48															0		
	1	2017	NAVY	522	0	522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	522					0			
✓	1	2017	NAVY	9	0	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9					0			
	1	2018	NAVY	198	0	198											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	198	
✓	1	2018	NAVY	8	0	8											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	
	1	2019	NAVY	11	0	11																		A -		-	-	-	-	11					
	1	2020	NAVY	97	0	97																													97
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019										
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin													Item Number / Title [DODIC]: 1 / JAVELIN										
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2020													Fiscal Year 2021													BALANCE
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020													Calendar Year 2021													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1.1.1) Guided Missiles ⁽¹⁾																																	
Prior Years Deliveries: 928																																	
	1	2016	NAVY	350	350	0																											0
✓	1	2016	NAVY	48	48	0																											0
	1	2017	NAVY	522	522	0																											0
✓	1	2017	NAVY	9	9	0																											0
	1	2018	NAVY	198	0	198																											-
✓	1	2018	NAVY	8	0	8	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	11	0									
	1	2019	NAVY	11	0	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0								
	1	2020	NAVY	97	0	97								A -	-	-	-	-	-	-	-	-	-	-	-	-	97						
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1								P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin											Item Number / Title [DODIC]: 1 / JAVELIN																			
Cost Elements (Units in Each)							Fiscal Year 2022											Fiscal Year 2023											BALANCE									
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022											Calendar Year 2023																				
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL		AUG	SEP							
1.1.1) Guided Missiles ⁽¹⁾																																						
Prior Years Deliveries: 928																																						
	1	2016	NAVY		350	350	0																										0					
✓	1	2016	NAVY		48	48	0																										0					
	1	2017	NAVY		522	522	0																										0					
✓	1	2017	NAVY		9	9	0																										0					
	1	2018	NAVY		198	198	0																										0					
✓	1	2018	NAVY		8	8	0																										0					
	1	2019	NAVY		11	11	0																										0					
	1	2020	NAVY		97	0	97	-	-	-	-	-	97	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	0

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1					P-1 Line Item Number / Title: 3011 / Anti-Armor Missile-Javelin				Item Number / Title [DODIC]: 1 / JAVELIN		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	JJV All Up Round ⁽²⁾ - Tucson AZ Orlando FL	850	3,960	6,480	11	3	22	25	6	3	29	32

"A" in the Delivery Schedule indicates the Contract Award Date.

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

Footnotes:

⁽²⁾ Javelin Joint Venture (JJV) includes Raytheon in Tucson, AZ and Lockheed Martin in Orlando, FL.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles							P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0603635M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	77.770	19.053	13.760	21.913	0.000	21.913	21.912	21.908	21.917	21.915	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	77.770	19.053	13.760	21.913	0.000	21.913	21.912	21.908	21.917	21.915	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	77.770	19.053	13.760	21.913	0.000	21.913	21.912	21.908	21.917	21.915	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Family of Anti-Armor Weapon System (FOAAWS): The solution to the Follow on to SMAW (FOTS) capability requirement is a Family of Marine-portable Rocket Systems. This Family of Systems is composed of separate lightweight, short range, fire-and-forget weapons. Marine Expeditionary Forces will employ the Family of Systems across the spectrum of conflict, under all environmental conditions, to neutralize or destroy a variety of ground targets including personnel, thin-skinned vehicles, and positions. The Family of Systems include various systems, such as SMAW Mod 2 and M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS). SMAW Mod 2 consists of a new launcher with an integrated laser range finder and thermal sight. MAAWS consists of a launcher and integrated fire control system, and has its own Marine Corps Product Code (MCPC) beginning in FY20.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles					P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0603635M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Follow on To Smaw - Active	P-5a, P-21			- / 77.770	- / 19.053	- / 13.760	- / 21.913	- / 0.000	- / 21.913
P-40	Total Gross/Weapon System Cost				- / 77.770	- / 19.053	- / 13.760	- / 21.913	- / 0.000	- / 21.913
*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 Base Appropriation Request: \$19.053M

FY18: \$19.053 funded procurement of 399 SMAW MOD 2 systems, associated support equipment, replacement millijoule meters for boresight kits, and initial issue spare parts.

FY 2019 Base Appropriation Request: \$13.760M

FY19: \$13.737M will fund procurement of M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS), with \$0.023M funding USMC program management support.

Decrease of \$5.293M funding from FY18 to FY19 is due to Shoulder-Launched Multipurpose Assault Weapon (SMAW) AAO being reached with SMAW Mod 2 and M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS) being implemented.

FY 2020 Base Appropriation Request: \$21.913M

FY20: \$21.912M will fund procurement of M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS) as a follow on capability to SMAW MOD 2 per Force 2025 and Close Combat Lethality Task Force (CCLTF) concepts and objectives. \$0.001M funds USMC program management support.

Increase of \$8.153M funding from FY19 to FY20 directly funds procurement of M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS) to meet AAO. The FY20 MAAWS quantity and unit cost increase is due to inflation and no change in the step-ladder pricing.

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1						P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)						Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				77.770		19.053		13.760		21.913		0.000		21.913				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				77.770		19.053		13.760		21.913		0.000		21.913				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				77.770		19.053		13.760		21.913		0.000		21.913				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Government Engineering Services	-	-	4.866	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) SMAW MOD 2 Launcher ^(†)	114,936.69	537	61.721	47,751.88	399	19.053	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS) ^(†)	-	-	-	-	-	-	63,893.02	215	13.737	64,070.18	342	21.912	-	-	-	64,070.18	342	21.912
1.1.5) Government Program Management	-	-	0.432	-	-	-	-	-	0.023	-	-	0.001	-	-	-	-	-	0.001
1.1.6) Non Recurring Expenditure (NRE) Production	-	-	2.254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	69.273	-	-	19.053	-	-	13.760	-	-	21.913	-	-	-	-	-	21.913
Subtotal: Flyaway Cost	-	-	69.273	-	-	19.053	-	-	13.760	-	-	21.913	-	-	-	-	-	21.913
Support Cost																		
2.1) SMAW MOD 2 - Reserves	-	-	0.894	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Prior Years Cumulative Funding	-	-	7.603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	-	-	8.497	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	77.770	-	-	19.053	-	-	13.760	-	-	21.913	-	-	0.000	-	-	21.913

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1	P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)	Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(†) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1				P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)				Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active				

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
1.1.2) SMAW MOD 2 Launcher ^(†)		2017	ADS, Inc. / Virginia Beach, VA	C / FFP	MCSC, Quantico, VA	May 2017	Nov 2018	474	47,033.20	Y		Jan 2015
1.1.2) SMAW MOD 2 Launcher ^(†)		2018	ADS, Inc. / Virginia Beach, VA	C / FFP	MCSC, Quantico, VA	Nov 2017	May 2019	399	47,751.88	Y		Jan 2015
1.1.3) M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS) ^(†)		2019	SAAB / Sweden	SS / FFP	Picatany Arsenal	Jan 2019	Jul 2019	215	63,893.02	Y		
1.1.3) M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS) ^(†)		2020	SAAB / Sweden	SS / FFP	Picatany Arsenal	Oct 2019	Jul 2020	342	64,070.18	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)										Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active																								
Cost Elements (Units in Each)							Fiscal Year 2017										Fiscal Year 2018													BALANCE														
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT				Calendar Year 2017										Calendar Year 2018																								
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP													
1.1.2) SMAW MOD 2 Launcher																																												
Prior Years Deliveries: 63																																												
	1	2017	NAVY	474	0	474											A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474							
	1	2018	NAVY	399	0	399																					A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	399
1.1.3) M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS)																																												
	2	2019	NAVY	215 ⁽¹⁾	0	215																													215									
	2	2020	NAVY	342 ⁽²⁾	0	342																													342									
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP														

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)										Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active														
Cost Elements (Units in Each)							Fiscal Year 2019													Fiscal Year 2020													B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT				Calendar Year 2019										Calendar Year 2020														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
1.1.2) SMAW MOD 2 Launcher																																		
Prior Years Deliveries: 63																																		
	1	2017	NAVY	474	0	474	-	50	50	50	50	50	50	50	50	50	24																	0
	1	2018	NAVY	399	0	399	-	-	-	-	-	-	-	50	50	50	50	50	50	50	49													0
1.1.3) M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS)																																		
	2	2019	NAVY	215 ⁽¹⁾	0	215				A	-	-	-	-	-	100	-	50	-	65													0	
	2	2020	NAVY	342 ⁽²⁾	0	342											A	-	-	-	-	-	-	-	-	-	-	-	-	114	-	114	114	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019										
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)													Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active										
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021													Fiscal Year 2022													BALANCE
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021													Calendar Year 2022													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1.1.2) SMAW MOD 2 Launcher																																	
Prior Years Deliveries: 63																																	
	1	2017	NAVY		474	474	0																										0
	1	2018	NAVY		399	399	0																										0
1.1.3) M3A1 Multi-purpose Anti-Armor Weapon System (MAAWS)																																	
	2	2019	NAVY		215 ⁽¹⁾	215	0																										0
	2	2020	NAVY		342 ⁽²⁾	228	114	-	114																								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1					P-1 Line Item Number / Title: 3016 / Family Anti-Armor Weapon Systems (FOAAWS)				Item Number / Title [DODIC]: 1 / Follow on To Smaw - Active			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	ADS, Inc. - Virginia Beach, VA	400	600	800	0	5	11	16	0	5	11	16
2	SAAB - Sweden	600	1,200	2,400	0	0	6	6	0	0	9	9

"A" in the Delivery Schedule indicates the Contract Award Date.

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

Footnotes:

- (1) The manufacturer is producing for both the Army and USMC. This delivery schedule reflects the Marine Corps planned deliveries in support of Marine Corps fielding plans.
- (2) The manufacturer is producing for both the Army and USMC. This delivery schedule reflects the Marine Corps planned deliveries in support of Marine Corps fielding plans.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles							P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0603635M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	155.853	49.569	51.232	60.501	0.000	60.501	40.358	42.445	33.283	33.951	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	155.853	49.569	51.232	60.501	0.000	60.501	40.358	42.445	33.283	33.951	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	155.853	49.569	51.232	60.501	0.000	60.501	40.358	42.445	33.283	33.951	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The M41A7 Saber weapon system is a combat proven system that provides long-range, lethal anti-armor precision assault capability for USMC Infantry, Tank, and Light Armored Reconnaissance Battalions across modern operational environments. The M41A7 is the replacement for the M220 Tube-launched, Optically-tracked, Wire/Wireless-guided (TOW) 2 weapon system. GPS-based location detection and an altitude determination subsystem generate a 10-digit grid coordinate of a target's position, and superior surveillance capability enables the warfighter to identify targets at long range and engage with TOW missiles or other weapon systems. TOW missiles (BGM-71 Series) are the munition for the M41A7 system. The TOW missile is a highly lethal, cost effective, interoperable, multi-purpose anti-armor round that is used in either direct-fire or "fly-over, shoot down" mode against field fortifications and structures. In its current configuration, the combination of the M41A7 and the TOW missile provides the capability to defeat armored vehicles, bunkers, and buildings at extended ranges in all battlefield conditions. The M41A7 is mounted from a variety of combat vehicle systems such as the Joint Lightweight Tactical Vehicle (JLTV), High Mobility Multipurpose Wheeled Vehicle (HMMWV), Mine Resistant Ambush Protected Vehicle (MRAP), and Light Armored Vehicle - Anti-Tank (LAV-AT), as well as having the capability for ground mounted operations. Organic Precision Strike (Medium) will meet the Marine Corps Forces Special Operations Command (MARSOC) requirement for a lethal precision capability by procuring the Spike NLOS (Non Line of Sight) system to support current combat operations. Spike NLOS is a multi-purpose, electro-optical (EO), Man-in-the-loop (MITL) missile system with a real-time wireless data link for ranges up to 32 km (minimum range of 1 km). It's manufactured by the Israeli company Rafael Advanced Defense Systems and is being delivered to US Special Forces via Lockheed Martin in partnership with Rafael. Spike NLOS is in operational use by USSOCOM, Spain, United Kingdom, South Korea, and Columbia. Spike NLOS or a like capability is a solid candidate to replace our aging Saber/TOW systems and modernize our infantry to meet the requirements identified in the Marine Corps Operating Concept. The Spike NLOS launcher and High Explosive Anti-Tank (HEAT) and Penetrator Blast Fragmentation (PBF) missiles match or exceed the capabilities of the Saber/TOW systems in range and effects. Such precision fires organic to the infantry would enable small units to achieve greater effects, shorten the kill chain at the tactical edge, counter threats within and outside complex and compartmentalized terrain, and harness the capabilities of our organic UAS. Capability / Shortfall: MARSOFs require the ability to strike stationary and mobile point targets in real time out to the limits of their ability to positively ID targets with organic ground and airborne ISR (AISR) assets while minimizing collateral damage. Potential target sets include personnel in the open or under light cover, light frame or single layer brick buildings, and unarmored or lightly armored vehicles (moving and stationary), to include vehicle-borne improvised explosive devices (VBIED) or high value targets (HVT) moving at speeds up to 45mph.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles					P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0603635M			
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	49.358	51.046	60.309	-	60.309	40.164	42.252	33.086	33.750
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.211	0.186	0.192	-	0.192	0.194	0.193	0.197	0.201
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	49.569	51.232	60.501	-	60.501	40.358	42.445	33.283	33.951

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles						P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603635M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / ANTI ARMOR WEAPNS SYSTEM-HEAVY (AAWS-H)	P-5a, P-21			- / 155.853	- / 49.569	- / 51.232	- / 60.501	- / 0.000	- / 60.501
P-40	Total Gross/Weapon System Cost				- / 155.853	- / 49.569	- / 51.232	- / 60.501	- / 0.000	- / 60.501
*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 Base Appropriation Request: \$45.109 (\$44.898M Active; \$0.211M Reserve) \$39.426M will procure 738 missiles (the maximum amount at the current government estimate) as well as recurring missile surcharge to support both missile expenditures and training requirements. \$5.683M will also be used for engineering and program management efforts associated with the refurbishing and retrofitting of missiles in order to extend their service life and will also support product improvement upgrades for the Saber System, engineering, logistics, program office support, and reserve equipment support. FY 2019 Base Appropriation Request: \$51.232M (\$51.046M Active; \$0.186M Reserve) \$45.891M, which includes \$44.533M for the procurement of 703 missiles (the maximum amount at the current government estimate) as well as \$1.358M for a recurring missile surcharge, will replenish inventory and support training requirements. \$5.341M will also be used for engineering and program management efforts associated with the refurbishing and retrofitting of missiles in order to extend their service life and will also support product improvement upgrades for the Saber System, engineering, logistics, program office support, and reserve equipment support. The unit price per missile is influenced by the demand in production quantities per year through foreign military sales and combined service purchases. The estimated missile unit prices for FY19 and FY20 are based on a Government Estimate for procurement of the TOW 2A Practice missile variant. The increase in unit price is due to an Engineering Change Proposal cut-in for TOW obsolescence mitigation and safety program, as well as inflation. FY 2020 Base Appropriation Request: \$60.501M (\$60.309M Active; \$0.192M Reserve) \$33.712M will procure 500 missiles (the maximum amount as the current government estimate) as well as recurring missile surcharge to support both missile expenditures and training requirements. \$4.839M will also be used for engineering and program management efforts associated with the refurbishing and retrofitting of missiles in order to extend their service life and will also support product improvement upgrades for the Saber System, engineering, logistics, program office support, and reserve equipment support. The unit price per missile is influenced by the demand in production quantities per year through foreign military sales and combined service purchases. The estimated missile unit prices for FY19 and FY20 are based on a Government Estimate for procurement of the TOW 2A Practice missile variant. The increase in unit price is due to an Engineering Change Proposal cut-in for TOW obsolescence mitigation and safety program, as well as inflation. FY19 to FY20 indicates a funding increase of \$9.269M due to a Spike NLOS (Non Line of Sight) requirement for \$21.950M being added to the program in FY20. The actual available funding in FY20 for the TOW missile program is \$38.551M, which is a decrease of \$12.681M from FY19 funding and results in 197 fewer missiles based on the current unit cost for FY20 missile procurement. The \$21.950M procures Spike NLOS for Marine Corps Forces Special Operations Command (MARSOC), with future capability for expansion to additional systems. The estimated project cost of one MARSOC Spike NLOS System is \$7.317M per system, which includes the missile launch/guidance system, an associated vehicle or adaptation of an existing vehicle, an inventory of 10 missiles, initial training/logistics support. This will buy 3 systems. OCO: FY 2018 Overseas Contingency Operations (OCO): \$4.460M Funding in the amount of \$4.251M covers replenishment of 83 TOW missiles in combat operations in theater as well as training specific ammunition for units in direct support of operations. Funding also provides for engineering, logistics, and program management support required to place TOW missiles in service.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1						P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW						Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				155.853		49.569		51.232		60.501		0.000		60.501				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				155.853		49.569		51.232		60.501		0.000		60.501				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				155.853		49.569		51.232		60.501		0.000		60.501				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway - Prior Years Cumulative Funding Cost																		
Recurring Cost																		
1.1.1) Guided Missiles ^(†) (1)	105,478.77	942	99.361	51,220.46	821	42.052	63,347.67	703	44.533	64,193.82	500	32.097	-	-	-	64,193.82	500	32.097
1.1.2) Recurring Missile Surcharge	-	-	-	-	-	1.835	-	-	1.358	-	-	1.615	-	-	-	-	-	1.615
Subtotal: Recurring Cost	-	-	99.361	-	-	43.887	-	-	45.891	-	-	33.712	-	-	-	-	-	33.712
Non Recurring Cost																		
1.2.1) Spike NLOS ^(†)	-	-	-	-	-	-	-	-	-	7,317K	3	21.950	-	-	-	7,317K	3	21.950
Subtotal: Non Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	21.950	-	-	-	-	-	21.950
Subtotal: Flyaway - Prior Years Cumulative Funding Cost	-	-	99.361	-	-	43.887	-	-	45.891	-	-	55.662	-	-	-	-	-	55.662
Support Cost																		
2.1) Missile Engineering Support ⁽²⁾	-	-	3.697	-	-	0.746	-	-	1.400	-	-	2.811	-	-	-	-	-	2.811
2.2) Missile Program Support ⁽³⁾	-	-	2.827	-	-	0.897	-	-	1.205	-	-	1.551	-	-	-	-	-	1.551
2.3) Saber Launcher Support ⁽⁴⁾	-	-	49.287	-	-	4.039	-	-	2.550	-	-	0.285	-	-	-	-	-	0.285
2.4) Reserves - Saber	-	-	0.681	-	-	-	-	-	0.186	-	-	0.192	-	-	-	-	-	0.192

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1	P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW	Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
<i>Subtotal: Support Cost</i>	-	-	56.492	-	-	5.682	-	-	5.341	-	-	4.839	-	-	-	-	-	4.839
Gross/Weapon System Cost	-	-	155.853	-	-	49.569	-	-	51.232	-	-	60.501	-	-	0.000	-	-	60.501

(†) indicates the presence of a P-5a

Footnotes:

- (1) The unit price per missile is influenced by the demand in production quantities per year through foreign military sales and combined service purchases. The estimated missile unit price for FY18 has been updated to reflect the current cost for the TOW 2A Practice missile variant, factoring inflation. The estimated missile unit prices for FY19 and FY20 are based on a Government Estimate for procurement of the TOW 2A Practice missile variant. The increase in unit price is due to an Engineering Change Proposal cut-in for TOW obsolescence mitigation and safety program, as well as inflation.
- (2) The Missile Engineering Support cost element was split from the overall Saber Engineering Support due to the need to track TOW missile-specific engineering support costs that are not utilized by the Saber Launcher system. The funding increase in FY19 and out is the result of increased tasking as the Saber/TOW system is transferred between programs.
- (3) The Missile Program Support cost element includes USMC PMO Support - Saber Product Improvement, and was split from overall Saber Program Support due to the need to track TOW missile-specific program support costs that are not utilized by the Saber Launcher system. The funding increase in FY19 and out is the result of increased tasking as the Saber/TOW system is transferred between programs.
- (4) Saber Launcher Support consolidates Saber Maintenance and Support Equipment, Saber Subsystems/Components, and Saber Programmatic and Engineering Support. The funding decrease in FY20 and out is the result of reduced tasking as the Saber Launcher system is transferred between programs.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1				P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW					Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)			
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) Guided Missiles ^(†)		2017	Raytheon, Tucson AZ ⁽⁵⁾ / AMCOM, Redstone Arsenal, AL	SS / FPIF	AMCOM, Redstone Arsenal, AL	Sep 2017	Mar 2020	157	58,273.00	Y		
1.1.1) Guided Missiles ^(†)		2018	Raytheon, Tucson AZ ⁽⁵⁾ / AMCOM, Redstone Arsenal, AL	SS / FPIF	AMCOM, Redstone Arsenal, AL	Apr 2018	Dec 2020	738	51,220.87	Y		
1.1.1) Guided Missiles ^(†)	✓	2018	Raytheon, Tucson AZ ⁽⁵⁾ / AMCOM, Redstone Arsenal, AL	SS / FPIF	AMCOM, Redstone Arsenal, AL	Apr 2018	Dec 2020	83	51,220.00	Y		
1.1.1) Guided Missiles ^(†)		2019	Raytheon, Tucson AZ ⁽⁵⁾ / AMCOM, Redstone Arsenal, AL	SS / FPIF	AMCOM, Redstone Arsenal, AL	Apr 2019	Dec 2021	703	63,347.67	Y		
1.1.1) Guided Missiles ^(†)		2020 ⁽⁶⁾	Raytheon, Tucson AZ ⁽⁵⁾ / AMCOM, Redstone Arsenal, AL	SS / FPIF	AMCOM, Redstone Arsenal, AL	Apr 2020	Dec 2022	500	64,193.82	Y		
1.2.1) Spike NLOS ^(†)		2020	Lockheed Martin@Dallas, TX / Dallas, TX	C / CPFF	Ft. Belvoir	Jan 2020	Aug 2021	3	7,317K	Y		

^(†) indicates the presence of a P-21

Footnotes:

⁽⁵⁾ Raytheon, located at the Aviation and Missile Command (AMCOM) Redstone Arsenal site, is currently the only industry source that is both facilitized and qualified to produce TOW missiles. Multiyear contracts do not follow the Administrative Lead Time shown for annual year contracts.

⁽⁶⁾ FY20 Base procurement dollars supports the fourth year of a five-year (FY17-21) multi-year contract. 10 U.S. Code #2431 and DoD FM Reg. Vol 2B, Ch 4 mandate Production Rates be defined in terms of budget year.

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW										Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)																						
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2017										Fiscal Year 2018													B A L A N C E												
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018																									
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P											
1.1.1) Guided Missiles ⁽¹⁾																																										
Prior Years Deliveries: 785																																										
	1	2017	NAVY	157 ⁽⁷⁾	0	157											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157								
	1	2018	NAVY	738 ⁽⁸⁾	0	738																								A -	-	-	-	-	-	-	-	-	-	-	-	738
✓	1	2018	NAVY	83 ⁽⁹⁾	0	83																								A -	-	-	-	-	-	-	-	-	-	-	-	83
	1	2019	NAVY	703 ⁽¹⁰⁾	0	703																															703					
	1	2020	NAVY	500 ⁽¹¹⁾	0	500																															500					
1.2.1) Spike NLOS																																										
	2	2020	NAVY	3	0	3																												3								
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P												

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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW														Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)											
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2019													Fiscal Year 2020													BALANCE		
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
1.1.1) Guided Missiles ⁽¹⁾																																			
Prior Years Deliveries: 785																																			
	1	2017	NAVY	157 ⁽⁷⁾	0	157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157							0		
	1	2018	NAVY	738 ⁽⁸⁾	0	738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	738				
✓	1	2018	NAVY	83 ⁽⁹⁾	0	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83				
	1	2019	NAVY	703 ⁽¹⁰⁾	0	703						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	703				
	1	2020	NAVY	500 ⁽¹¹⁾	0	500																	A -						-	-	-	-	-	-	500
1.2.1) Spike NLOS																																			
	2	2020	NAVY	3	0	3																	A -	-	-	-	-	-	-	-	-	-	-	-	3
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW														Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)												
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021														Fiscal Year 2022														BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP						
1.1.1) Guided Missiles ⁽¹⁾																																				
Prior Years Deliveries: 785																																				
	1	2017	NAVY		157 ⁽⁷⁾	157	0																													0
	1	2018	NAVY		738 ⁽⁸⁾	0	738	-	-	738																										0
✓	1	2018	NAVY		83 ⁽⁹⁾	0	83	-	-	83																										0
	1	2019	NAVY		703 ⁽¹⁰⁾	0	703	-	-	-	-	-	-	-	-	-	-	-	-	-	-	703											0			
	1	2020	NAVY		500 ⁽¹¹⁾	0	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500						
1.2.1) Spike NLOS																																				
	2	2020	NAVY		3	0	3	-	-	-	-	-	-	-	-	-	3																			0
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																	
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW										Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)																	
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2023												Fiscal Year 2024												BALANCE						
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024																		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP							
1.1.1) Guided Missiles ⁽¹⁾																																					
Prior Years Deliveries: 785																																					
	1	2017	NAVY		157 ⁽⁷⁾	157	0																											0			
	1	2018	NAVY		738 ⁽⁸⁾	738	0																											0			
✓	1	2018	NAVY		83 ⁽⁹⁾	83	0																											0			
	1	2019	NAVY		703 ⁽¹⁰⁾	703	0																											0			
	1	2020	NAVY		500 ⁽¹¹⁾	0	500	-	-	500																											0
1.2.1) Spike NLOS																																					
	2	2020	NAVY		3	3	0																											0			
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP						

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1					P-1 Line Item Number / Title: 3017 / Anti-Armor Missile-TOW				Item Number / Title [DODIC]: 1 / ANTI ARMOR WEAPNS SYSTEM- HEAVY (AAWS-H)			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Raytheon, Tucson AZ ⁽⁵⁾ - AMCOM, Redstone Arsenal, AL	2,100	7,200	16,800	3	2	16	18	3	2	16	18
2	Lockheed Martin@Dallas, TX - Dallas, TX	1	3	5	0	0	11	11	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).

Footnotes:

⁽⁵⁾ Raytheon, located at the Aviation and Missile Command (AMCOM) Redstone Arsenal site, is currently the only industry source that is both facilitized and qualified to produce TOW missiles. Multiyear contracts do not follow the Administrative Lead Time shown for annual year contracts.

⁽⁷⁾ FY17 missile procurement will deliver TOW 2A Radio Frequency (RF) missiles

⁽⁸⁾ FY18 missile procurement will deliver TOW 2A Practice missiles

⁽⁹⁾ FY18 missile procurement will deliver TOW 2A Practice missiles

⁽¹⁰⁾ FY19 missile procurement will deliver TOW 2A Practice missiles

⁽¹¹⁾ FY20 missile procurement will deliver TOW 2A Practice missiles

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles							P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)					
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	210	130	340	735	431	743	755	-	3,004
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	29.062	16.919	45.981	110.307	67.428	114.206	116.289	-	454.211
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	29.062	16.919	45.981	110.307	67.428	114.206	116.289	-	454.211
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	29.062	16.919	45.981	110.307	67.428	114.206	116.289	-	454.211
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	135,547.62	130,146.15	133,482.35	126,221.77	154,976.80	152,831.76	153,135.10	-	144,514.98
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	138,390.48	130,146.15	135,238.24	150,077.55	156,445.48	153,709.29	154,025.17	-	151,202.06
Description: Guided Multiple Launch Rocket System (GMLRS) rockets are surface-to-surface artillery rockets fired from the High Mobility Artillery Rocket System (HIMARS) launchers. GMLRS rockets provide 24/7, all-weather precision fires to engage both area and point targets at short, medium, and long ranges. In order to align with the National Defense Strategy and continuously deliver performance with affordability and speed, the Marine Corps procures its GMLRS rockets in concert with Army via the Precision Fires Rocket and Missile project office. The GMLRS program is critical to sustaining a Joint Force military advantage and maintaining a favorable regional balance of power in the theaters in which HIMARS deploys. There are three variants of the GMLRS; Unitary (U); Alternative Warhead (AW); and Dual Purpose Improved Conventional Munition (DPICM) which production was terminated in response to the June 2008 Department of Defense (DoD) Cluster Munitions Policy. The GMLRS-U utilizes a 200-pound high explosive warhead to engage point targets with limited collateral damage. GMLRS AW was developed as a non-cluster munition replacement for DPICM that is used to engage area and imprecisely located targets. The GMLRS AW rocket is 90% common with the Unitary variant. Both GMLRS-U and AW are currently in full rate production.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	186	130	316	714	410	721	733		
	Total Obligation Authority	-	-	25.934	16.919	42.853	107.113	64.190	110.880	112.896		
NR	Quantity	-	-	24	-	24	21	21	22	22		
	Total Obligation Authority	-	-	3.128	-	3.128	3.194	3.238	3.326	3.393		
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-		
	Total Obligation Authority	-	-	29.062	16.919	45.981	110.307	67.428	114.206	116.289		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 03: Guided missiles and equipment / BSA 1: Guided Missiles						P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)				
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Guided MLRS Rocket (GMLRS)	P-5a, P-21			- / 0.000	- / 0.000	- / 0.000	210 / 29.062	130 / 16.919	340 / 45.981
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	210 / 29.062	130 / 16.919	340 / 45.981
*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: Prior to FY 2020 Guided Multiple Launch Rocket System (GMLRS) was budgeted out of the Artillery Weapons System (HIMARS) line item. (LI:2212) This is not a new start. FY 2020 Baseline Appropriation Request: \$29.062M (\$25.934M Active; Reserves \$3.128M) FY 2020 baseline funding will support the procurement of GMLRS Alternative Warhead (AW) for active and reserve components. The USMC is accounting for GMLRS base missile costs and ancillary support items separately to better match the Army's budget structure. Ancillary support items include; warheads, production verification testing, transportation, production engineering support, ECPs, and government management. Tactical GMLRS Hardware unit costs are dependent on total quantities negotiated by the Army Contracting Command-Redstone with Lockheed Martin and procured by the Army, Marine Corps and Foreign Military Sales (FMS) organizations for contract award. The Marine Corps Tactical GMLRS Hardware unit cost does not include GMLRS Training Devices. OCO: FY 2020 OCO Appropriation Request: \$16.919M Funds will support the replenishment of GMLRS munitions expended in efforts involving contingency operations, Operation Freedom's Sentinel-Afghanistan (OFS-A).										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1						P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)						Item Number / Title [DODIC]: 1 / Guided MLRS Rocket (GMLRS)						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				-		-		-		210		130		340				
Gross/Weapon System Cost (\$ in Millions)				0.000		0.000		0.000		29.062		16.919		45.981				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				0.000		0.000		0.000		29.062		16.919		45.981				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				0.000		0.000		0.000		29.062		16.919		45.981				
(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)				-		-		-		138,390.48		130,146.15		135,238.24				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Tactical GMLRS Hardware ^(†)	-	-	-	-	-	-	-	-	-	128,402.00	186	23.883	128,402.00	130	16.692	128,402.00	316	40.575
1.1.3) Tactical GMLRS Hardware (Reserves) ^(†)	-	-	-	-	-	-	-	-	-	128,402.00	24	3.082	-	-	-	128,402.00	24	3.082
1.1.4) First Destination Transport	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	0.072	-	-	0.222
1.1.5) Production Engineering Support	-	-	-	-	-	-	-	-	-	-	-	1.327	-	-	0.155	-	-	1.482
1.1.6) Production Engineering Support (Reserves)	-	-	-	-	-	-	-	-	-	-	-	0.023	-	-	-	-	-	0.023
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	28.465	-	-	16.919	-	-	45.384
Subtotal: Flyaway Cost	-	-	-	-	-	-	-	-	-	-	-	28.465	-	-	16.919	-	-	45.384
Support Cost																		
2.1) Government Management	-	-	-	-	-	-	-	-	-	-	-	0.597	-	-	-	-	-	0.597
Subtotal: Support Cost	-	-	-	-	-	-	-	-	-	-	-	0.597	-	-	-	-	-	0.597
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	0.000	138,390.48	210	29.062	130,146.15	130	16.919	135,238.24	340	45.981
†) indicates the presence of a P-5a																		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1				P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)				Item Number / Title [DODIC]: 1 / Guided MLRS Rocket (GMLRS)				

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) Tactical GMLRS Hardware ^(†)		2020	Lockheed Martin / Dallas, TX	SS / FPIF	Aviationand Missile Command	Feb 2020	Sep 2022	186	128,402.00	N	Feb 2021	Feb 2019
1.1.1) Tactical GMLRS Hardware ^(†)	✓	2020	Lockheed Martin / Dallas, TX	SS / FPIF	Aviationand Missile Command	Feb 2020	Sep 2022	130	128,402.00	N	Feb 2021	Feb 2019
1.1.3) Tactical GMLRS Hardware (Reserves) ^(†)		2020	Lockheed Martin / Dallas, TX	SS / FPIF	Aviation and Missile Cmd	Feb 2020	May 2021	24	128,402.00	N	Feb 2019	Feb 2019

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)										Item Number / Title [DODIC]: 1 / Guided MLRS Rocket (GMLRS)														
Cost Elements (Units in Each)							Fiscal Year 2020										Fiscal Year 2021													B A L A N C E				
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020										Calendar Year 2021																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P			
1.1.1) Tactical GMLRS Hardware																																		
	1	2020	NAVY	186	0	186						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186		
✓	1	2020	NAVY	130	0	130						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130		
1.1.3) Tactical GMLRS Hardware (Reserves)																																		
	2	2020	NAVY	24	0	24						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24					0
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1										P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)										Item Number / Title [DODIC]: 1 / Guided MLRS Rocket (GMLRS)												
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2022										Fiscal Year 2023													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022										Calendar Year 2023															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P	
1.1.1) Tactical GMLRS Hardware																																
	1	2020	NAVY	186	0	186	-	-	-	-	-	-	-	-	-	-	-	17	17	17	17	17	17	17	17	17	17	17	16		0	
✓	1	2020	NAVY	130	0	130	-	-	-	-	-	-	-	-	-	-	-	12	12	12	12	12	12	12	12	12	12	12	10		0	
1.1.3) Tactical GMLRS Hardware (Reserves)																																
	2	2020	NAVY	24	24	0																									0	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P		

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 03 / 1					P-1 Line Item Number / Title: 3025 / Guided MLRS Rocket (GMLRS)					Item Number / Title [DODIC]: 1 / Guided MLRS Rocket (GMLRS)			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)								
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder				
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	
1	Lockheed Martin - Dallas, TX	2,160	10,002	10,002	0	2	16	18	0	5	15	20	
2	Lockheed Martin - Dallas, TX			600	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: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 4: Command and Control Systems							P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0206335M				
Line Item MDAP/MAIS Code: N36												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	81.371	48.295	32.587	37.203	0.000	37.203	33.051	3.970	4.065	4.261	-	244.803
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	81.371	48.295	32.587	37.203	0.000	37.203	33.051	3.970	4.065	4.261	-	244.803
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	81.371	48.295	32.587	37.203	0.000	37.203	33.051	3.970	4.065	4.261	-	244.803
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Common Aviation Command and Control System (CAC2S) is a modernization effort to replace the legacy aviation command and control equipment within the Marine Air Command and Control System (MACCS). CAC2S provides the Aviation Combat Element with the necessary hardware, software, equipment and facilities to effectively command, control, coordinate and integrate aviation operations within the Marine Air-Ground Task Force and Joint and Coalition Forces. CAC2S integrates air surveillance information from MACCS organic radars (AN/TPS-59 and AN/TPS-80 G/ATOR) and is interoperable with Composite Tracking Network (CTN) to enable coordinated air battle management and fires with the Navy's Cooperative Engagement Capability (CEC). CAC2S interfaces ground command and control systems to enable greater integration of air-ground operations across the MAGTF. CAC2S Increment I replaces legacy aviation command and control systems in the following Marine aviation agencies: Direct Air Support Center (DASC), Tactical Air Command Center (TACC), and Tactical Air Operations Center (TAOC). Future CAC2S increments incorporating Marine Air Traffic Control, Ground Based Air Defense, Unmanned Aerial Systems (UAS), airborne and shipboard variants and capabilities are anticipated.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 4: Command and Control Systems						P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0206335M				
Line Item MDAP/MAIS Code: N36										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Common Aviation Command and Control System (CAC2S)	P-5a			- / 81.371	- / 48.295	- / 32.587	- / 37.203	- / 0.000	- / 37.203
P-40	Total Gross/Weapon System Cost				- / 81.371	- / 48.295	- / 32.587	- / 37.203	- / 0.000	- / 37.203
*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 Base Appropriation (\$48.295M): Funded continuation of the CAC2S full-rate-production (FRP) contract procuring Lots 2 and 3 of the AN/TSQ-297 Full Deployment Units (FDUs). Twenty-one (21) FRP/FDU systems were procured to buy out the remaining quantity of systems needed to attain the CAC2S Approved Acquisition Objective (AAO) of 50 systems. CAC2S Lot 3 FDU procurement was executed 1 year ahead of schedule. Funds to accelerate production were sourced through a Should Cost initiative that reduced government furnished equipment (GFE) and reallocated the funding to accelerate CAC2S Lot 3 production from FY 2019 to FY 2018. Following award of the FRP contract, Headquarters Marine Corps, Combat Development & Integration (CD&I) approved removal of legacy Tactical Data Link (TDL-A/B) requirements from the CAC2S Capability Production Document. It was determined that CAC2S implementation of modern, prevalent TDL's (TDL-J, JREAP & CEC) provides the capabilities required to operate in joint / coalition environments and that the legacy TDL-A/B offered limited utility. Removal of TDL-A/B requirements and associated GFE components enabled reallocation of funds to support procurement of Lot 3 in FY 2018 - a year ahead of schedule. In addition, the FY 2018 budget supported all activities required for CAC2S procurement and fielding which included procurement of remaining GFE, production / fielding support and new equipment training. GFE primarily consists of components that contain controlled, cryptographic items such as the Army-Navy/Portable Radio Communication 117G (AN/PRC-117G) and Miniature Precision Lightweight GPS Receiver (PLGR) Engine - Selective (GPS MPE-S). FY 2019 Base Appropriation (\$32.587M): Funds procure tactical voice/data radios associated with the CAC2S MRQ-13 Communications Subsystem (CS) refresh/upgrade. The CS was originally fielded in FY 2006 and has been sustained and repurposed to provide CAC2S operators access to tactical radios required to communicate with aircraft and external agencies. The CS is a High Mobility Multipurpose Wheeled Vehicle (HMMWV) mounted shelter containing voice over internet protocol (VoIP) networking/intercom components and tactical radios that enables remote communications access and control from laptop computers within the CAC2S operations facility/tent. The seventy-seven (77) CS vehicles associated with CAC2S currently retain 2006 era radios. These obsolete radios must be replaced to meet NSA crypto modernization mandates and enable CAC2S to maintain voice/data interoperability with joint forces. FY 2019 funds made available through the FY 2018 Should Cost initiative allows accelerated procurement of tactical radios for the CS refresh/upgrade to occur beginning 1 year ahead of schedule. Accelerated procurement of the tactical radios increases CS interoperability, reliability and sustainability and enable CAC2S to meet NSA crypto modernization mandates as the legacy/obsolete CS radios and networking components are replaced with modern, readily supportable communications equipment. The FY 2019 budget also supports the procurement of the Multi-function Information Distribution System (MIDS) Block II upgrade required to comply with DoD frequency remapping and NSA crypto modernization mandates by FY 2020. FY 2020 Base Appropriation (\$37.203M):										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 4: Command and Control Systems		P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0206335M
Line Item MDAP/MAIS Code: N36		
Funds will continue the procurement of radios and voice networking/intercom components associated with the AN/MRQ-13 Communications System (CS) refresh/upgrade. Replaces obsolete voice/data communications components with modernized equipment that is more reliable, readily supportable and cyber-secure, enabling integration with CAC2S voice/data networks and interoperability with joint forces. Funding continues to support CAC2S FDU fielding and associated, on-site new equipment training that is provided with CAC2S deliveries to the operating forces. Supports installation of engineering changes that require integration upon initial delivery of the production systems. The \$4.616M increase from FY 2019 to FY 2020 supports continued procurement of voice communications components required to refresh/upgrade the seventy-seven (77) CS vehicles.		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 4						P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)						Item Number / Title [DODIC]: 1 / Common Aviation Command and Control System (CAC2S)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				81.371		48.295		32.587		37.203		0.000		37.203				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				81.371		48.295		32.587		37.203		0.000		37.203				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				81.371		48.295		32.587		37.203		0.000		37.203				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-				
Gross/Weapon System Unit Cost (\$ in Dollars)				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Limited Deployment Unit (LDU)(†)	2,422K	8	19.377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) LDU (Reserve)(†)	2,158K	1	2.158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.3) Full Deployment Unit (FDU) AN/ TSQ-297(V)1 Variant(†) (1)	1,622K	10	16.215	1,640K	21	34.449	-	-	-	-	-	-	-	-	-	-	-	-
1.1.4) Full Deployment Unit (FDU) AN/ TSQ-297(V)2 Variant(†) (2)	2,725K	3	8.175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.5) Full Deployment Unit (FDU) AN/ TSQ-297(V)3 Variant(†) (3)	1,530K	7	10.707	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.6) ECP Production	-	-	3.417	-	-	0.966	-	-	1.671	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	60.049	-	-	35.415	-	-	1.671	-	-	-	-	-	-	-	-	-
Non Recurring Cost																		
1.2.1) LDU Refurbishment	-	-	1.127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 4						P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)						Item Number / Title [DODIC]: 1 / Common Aviation Command and Control System (CAC2S)						
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
1.2.2) AN/MRQ-13 Communications Subsystem Upgrade (4)	-	-	-	-	-	-	-	-	18.816	-	-	31.597	-	-	-	-	-	31.597
Subtotal: Non Recurring Cost	-	-	1.127	-	-	-	-	-	18.816	-	-	31.597	-	-	-	-	-	31.597
Subtotal: Flyaway Cost	-	-	61.176	-	-	35.415	-	-	20.487	-	-	31.597	-	-	-	-	-	31.597
Hardware Cost																		
Recurring Cost																		
2.1.1) Army-Navy/ Portable Radio Communication 117G (AN/PRC 117G)	-	-	0.441	-	-	0.363	-	-	0.218	-	-	-	-	-	-	-	-	-
2.1.2) GPS - MPE-S (See ACRN defined in P5 Remarks) (5)	-	-	0.013	-	-	0.012	-	-	0.009	-	-	-	-	-	-	-	-	-
2.1.3) MIDS Block II Crypto Modernization (6)	-	-	-	-	-	-	-	-	0.811	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	0.454	-	-	0.375	-	-	1.038	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	0.454	-	-	0.375	-	-	1.038	-	-	-	-	-	-	-	-	-
Support Cost																		
3.1) Production Support	-	-	4.882	-	-	1.171	-	-	1.580	-	-	-	-	-	-	-	-	-
3.2) Engineering/Fielding Support (7)	-	-	3.564	-	-	3.850	-	-	3.965	-	-	2.798	-	-	-	-	-	2.798
3.3) Common Software Baseline	-	-	5.833	-	-	2.478	-	-	-	-	-	-	-	-	-	-	-	-
3.4) Program Acquisition Support	-	-	1.040	-	-	1.239	-	-	1.680	-	-	-	-	-	-	-	-	-
3.5) New Equipment Training (NET) (8)	-	-	4.422	-	-	3.767	-	-	3.837	-	-	2.808	-	-	-	-	-	2.808
Subtotal: Support Cost	-	-	19.741	-	-	12.505	-	-	11.062	-	-	5.606	-	-	-	-	-	5.606
Gross/Weapon System Cost	-	-	81.371	-	-	48.295	-	-	32.587	-	-	37.203	-	-	0.000	-	-	37.203
(†) indicates the presence of a P-5a																		
Footnotes:																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 4	P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)	Item Number / Title [DODIC]: 1 / Common Aviation Command and Control System (CAC2S)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(1) CAC2S Full Rate Production (FRP) contract includes procurement of three Full Deployment Unit (FDU) variants which differ in capacity and cost. The AN/TSQ-297(V)1 variant is equipped with a tent-based operations facility providing 18 operator workstations. The CAC2S (V)1 variant is fielded to Tactical Air Operations Centers (TAOC), Early Warning & Control (E/WC) detachments and Direct Air Support Centers (DASC) agencies. Following FRP contract award, Headquarters Marine Corps, Combat Development & Integration (CD&I) approved removal of legacy Tactical Data Link (TDL-A/B) requirements from the CAC2S Capability Production Document. Removal of TDL-A/B requirements and associated GFE components from the FRP contract / systems enabled reallocation of funds to support procurement all CAC2S V1 variants with FY2017 and FY2018 appropriated funds. (2) CAC2S Full Rate Production (FRP) contract includes procurement of three Full Deployment Unit (FDU) variants which differ in capacity and cost. The AN/TSQ-297(V)2 variant is equipped with a tent-based operations facility providing 176 operator workstations - which accounts for the higher unit cost compared to the (V)1 and (V)3 variants. The CAC2S (V)2 variant is fielded to each Marine Aircraft Wing's Tactical Air Command Center (TACC). (3) CAC2S Full Rate Production (FRP) contract includes procurement of three Full Deployment Unit (FDU) variants which differ in capacity and cost. The AN/TSQ-297(V)3 variant is operationally the same as the (V)1 variant, but is not equipped with tactical vehicles and tents, which accounts for the lower unit cost. The CAC2S (V)3 variant is fielded to the supporting establishment and Military Occupational Specialty producing schools. (4) Funds procure tactical radios, voice networking/intercom components required for the AN/MRQ-13 Communications System (CS) refresh/upgrade. The CS upgrade replaces 2006 era, obsolete voice/data communications components with modernized equipment that is more reliable, readily supportable and cyber-secure, enabling integration with CAC2S networks and interoperability with joint forces. FY 2019 funds made available through a FY 2018 Should Cost initiative allows accelerated procurement of components for the CS refresh/upgrade to occur beginning 1 year ahead of schedule. Accelerated procurement of the refresh/upgrade components improves CS interoperability, reliability and sustainability and enable CAC2S to meet NSA crypto modernization mandates as the legacy/obsolete CS radios and networking components are replaced with modern, readily supportable communications equipment. The \$12.781M increase from FY 2019 to FY 2020 supports continued procurement of voice communications components required to refresh/upgrade the seventy-seven (77) CS vehicles. (5) Global Positioning System - Miniature Precision Lightweight GPS Receiver (PLGR) Engine - Selective Availability Anti-spoofing Module (SAASM) (GPS - MPE-S). (6) FY 2019 budget increase supports procurement of the Multi-function Information Distribution System (MIDS) Block II upgrade required to comply with DoD frequency remapping and NSA crypto modernization mandates by FY 2020. MIDS radios provide the primary means to exchange Tactical Data Link (TDL-J) air battlespace information among joint and coalition aviation command and control agencies and aircraft. The MIDS circuit cards and crypto devices are over 30 years old and have reached the end of their lifecycle. The Block II upgrade was funded by Marine Air Command and Control System (MACCS) (PE: 0206313M; BLI:4640) in FY2017 and FY2018. CAC2S replaces legacy MACCS equipment that used the MIDS radios, however CAC2S will continue to procure the remaining quantity of MIDS Block II upgraded radios required to reutilize and integrate the radios within the CAC2S FDU systems. (7) Engineering/Fielding support provides funds required to address fact of life system failure and reliability fixes as well as engineering support required to address hardware obsolescence and refresh. -\$1.167M reduction from FY19 to FY20 is due to the transition of engineering support to operations and sustainment. (8) -\$1.029M reduction from FY 2019 to FY 2020 is due to reduction of required NET for AN/TSQ-297 FDUs in FY 2020.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 4				P-1 Line Item Number / Title: 4644 / Common Aviation Command and Control System (CAC2S)				Item Number / Title [DODIC]: 1 / Common Aviation Command and Control System (CAC2S)				

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) Limited Deployment Unit (LDU)		2016 ⁽⁹⁾	General Dynamics / Scottsdale, AZ	C / FFP	MCSC, Quantico, VA	Jun 2016	Jun 2017	4	2,158K	Y		Feb 2012
1.1.2) LDU (Reserve)		2016	General Dynamics / Scottsdale, AZ	C / FFP	MCSC, Quantico, VA	Apr 2016	Apr 2017	1	2,158K	Y		Feb 2012
1.1.3) Full Deployment Unit (FDU) AN/TSQ-297(V)1 Variant		2017	General Dynamics / Scottsdale, AZ	C / FFP	MCSC, Quantico, VA	Aug 2017	Aug 2018	10	1,622K	Y		Oct 2016
1.1.3) Full Deployment Unit (FDU) AN/TSQ-297(V)1 Variant		2018	General Dynamics / Scottsdale, AZ	C / FFP	MCSC, Quantico, MCSC, Quantico, VA	May 2018	Feb 2019	21	1,640K	Y		Oct 2016
1.1.4) Full Deployment Unit (FDU) AN/TSQ-297(V)2 Variant		2017	General Dynamics / Scottsdale, AZ	C / FFP	Quantico, VA	Aug 2017	Aug 2018	3	2,725K	Y		Oct 2016
1.1.5) Full Deployment Unit (FDU) AN/TSQ-297(V)3 Variant		2017	General Dynamics / Scottsdale, AZ	C / FFP	Quantico, VA	Aug 2017	Aug 2018	7	1,530K	Y		Oct 2016

Footnotes:

⁽⁹⁾ Total System AAO = 50 as reflected on the P5. 4 PY refurbished assets not reflected on P5a.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 7: Repair and Test Equipment							P-1 Line Item Number / Title: 4181 / Repair and Test Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0206624M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	248.712	38.117	45.656	55.156	0.000	55.156	25.061	35.398	32.442	33.104	-	513.646
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	248.712	38.117	45.656	55.156	0.000	55.156	25.061	35.398	32.442	33.104	-	513.646
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	248.712	38.117	45.656	55.156	0.000	55.156	25.061	35.398	32.442	33.104	-	513.646
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	0.173	0.174	0.178	-	0.178	0.180	0.184	0.189	0.194	Continuing	Continuing
Flyaway Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: Repair and Test Equipment Budget Line Item provides repair and test equipment consisting of more than 200 different items required to support the operation and maintenance of USMC ground based weapon systems and major end items. Repair and test equipment includes items such as tool kits, shop sets, manual and automatic test equipment, as well as metrology and calibration equipment. The following acquisition programs fall under the repair and test equipment budget line: General Purpose Tools and Test Systems (GPT&TS); Automatic Test Systems (ATS), Calibration and Maintenance Program (CAMP), and Marine Air-Ground Task Force (MAGTF) Logistics Support Systems (MLS2).												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 7: Repair and Test Equipment					P-1 Line Item Number / Title: 4181 / Repair and Test Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0206624M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Repair and Test Equipment	P-5a, P-21			- / 248.712	- / 38.117	- / 45.656	- / 55.156	- / -	- / 55.156
P-40	Total Gross/Weapon System Cost				- / 248.712	- / 38.117	- / 45.656	- / 55.156	- / 0.000	- / 55.156
*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:

FY2018 Baseline Appropriation Request: \$29.613M (ACTIVE:\$38.117M/RESERVE:\$0.000M)

General Purpose Tools and Test Systems (GPT&TS) \$4.754M: The GPT&TS budget procures a wide variety of portable tool kits, large tool shop sets (mounted on vehicles or trailers or contained within 20-ft shelters), handheld electronic test equipment, handheld mechanical test equipment, and large mechanical test equipment contained in shelters or buildings. All of these items are commercial off the shelf or modified commercial off the shelf type equipment that are required to support the field maintenance effort of USMC ground equipment and weapon systems located within USMC expeditionary battalions and squadrons. FY18 funding procured new water cooled Mobile Lube Unit air compressors, Expeditionary Fuel Test Shop, and hardware and software required for Fuel Test Stand Application Program Sets that support maintenance efforts on new fuel components (pumps and injectors). Funding procured engineering, logistics, system software support, and cyber security efforts for the entire portfolio of GPT&TS items. The General Mechanics Tool Kit (GMTK) had a fact of life reduction of FY18 quantities and funding to zero due to an Army GMTK contract that was awarded in FY18 and later canceled due to vendor protest. Due to Army acquisition change, funds re-directed to procure Fuel Test Stand Test Program Sets to meet higher priority requirement.

Automatic Test Systems (ATS) \$25.163M: Funding supported procurement of Engineer Change Proposal (ECP) kits to enhance capability and mitigate against obsolescence for Automatic Test Systems (ATS) such as the General Purpose Automatic Test System (GPATS), Ground Radio Maintenance Automatic Test System (GRMATS), and associated applications that enable ATS to test weapon system platforms. These ATS provide mobile automatic testing on Line Replaceable Units (LRU) and Circuit Card Assemblies (CCA), enabling rapid restoration of weapon systems. ATS consists of both hardware and software components that provides mobile and automatic testing on Principle End Items (PEI), Line Replaceable Units (LRU), and Shop Repairable Units (SRU) in order to improve weapon system readiness, provide an organic maintenance solution, and decrease life cycle costs of supported weapon systems. Specific Application Program Systems (APS) procurements for FY18 included the Light Armored Vehicle Anti-Tank (LAV-AT) LRU APS and Very Small Aperture Terminal (VSAT) APS.

Calibration and Maintenance Program (CAMP) \$0.576M: Funding supported the necessary modifications and updates to the Marine Corps Field Level Calibration Facility (AN/TSM-214A). There are twelve fielded Calibration Facilities, with each consisting of four twenty-foot International Organization for Standardization (ISO) containers and a wide variety of Calibration Standards and support equipment. This facility is designed for expeditionary deployments and use in austere environments. Various Calibration Standards, controllers (work stations), and software must be replaced/upgraded over time in order to support and calibrate all the different test equipment used by various maintenance personnel working on USMC ground military equipment. FY18 funding procured new Windows 10 equipment set replacements for the legacy Windows 7 Digital Analysis Control Group that is utilized in the deployed calibration facilities.

MAGTF Logistics Support Systems (MLS2) \$7.624M: Funding procured Electronic Maintenance Support Systems (EMSS). FY18 funds procured Commercial Off-The-Shelf (COTS) equipment that comprises the EMSS and technical support for fielded systems. The EMSS provides a Commercial Off-The-Shelf (COTS) hardware device equipped with Built-In-Test/Built-In-Test Equipment (BIT/BITE) interfaces, and Software Defined Test Instrument (SDTI) that provides capabilities such as Interactive Electronic Technical Manuals (IETMs), Computer Based Training (CBT), and other maintenance applications. EMSS also has the capability to connect to the Marine Corps Enterprise Network (MCEN) and access sites like Global Combat Support System - Marine Corps (GCSS-MC) in order to facilitate maintenance and supply transactions, thereby improving readiness. EMSS connected to the MCEN were demonstrated to provide maintainers a time savings of upwards of 15% per task and 40 minutes per day based on their average

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 7: Repair and Test Equipment		P-1 Line Item Number / Title: 4181 / Repair and Test Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0206624M
Line Item MDAP/MAIS Code: N/A		
workload. Operating software is no longer required in FY18 and out due to a USMC enterprise transition from an end-device subscription model to an end-user subscription model. Funding re-directed to fund additional technical support requirements (See Cost Element 1.4 for details).		
FY2019 Baseline Appropriation Request: \$45.656M (ACTIVE:\$45.656M, RESERVE:\$0.000M)		
General Purpose Tools and Test Systems (GPT&TS) \$13.329M: The GPT&TS budget procures a wide variety of portable tool kits, large tool shop sets (mounted on vehicles or trailers or contained within 20-ft shelters), handheld electronic test equipment, handheld mechanical test equipment, and large mechanical test equipment contained in shelters or buildings. All of these items are commercial off the shelf or modified commercial off the shelf type equipment that are required to support the field maintenance effort of USMC ground equipment and weapon systems located within USMC expeditionary battalions and squadrons. FY19 funding includes the procurement of a new technology of Additive Manufacturing (also known as 3D printing) to enhance our existing fabrication capability using fielded machine shops. FY19 funding will procure portable electronic test sets such as Radio Test Sets, Microwave Radio and Radar Test Sets, Microwave Signal Generators, Data Network Testers, and Fluid Analyzers. The Microwave Signal Generators and Data Network Testers were added to the FY19 effort due to urgent need to support readiness issues with microwave radios such as VSAT. Due to an acquisition strategy change, the Vehicle Automated Diagnostic System (VADS) program moved to the Automatic Test Systems program and funding re-directed to procure other higher priority requirements, Microwave Signal Generator and Data Network Tester. FY19 funding procures large mechanical test stands and associated equipment necessary to test vehicle components. These test items include engine and transmission dynamometers and fuel test stands. In addition, funding will procure engineering, logistics, system software support, and cyber security efforts for the entire portfolio of GPT&TS items. The General Mechanics Tool Kit (GMTK) had a fact of life reduction of FY19 quantities and funding to zero due to an Army GMTK contract that was awarded in FY18 and later canceled due to vendor protest. Due to Army acquisition change, funds re-directed to increase FY19 quantities and unit cost for Operators Fluid Analysis Test Sets. Unit cost increase supports additional capability for additive hardware that will expand on the Tier I capability and quantities increased to meet AAO. Automatic Test Systems (ATS) \$9.958M: Funding supports procurement of the Circuit Card Assembly (CCA) Test Station modernized replacement system as well as Engineer Change Proposal (ECP) kits to enhance capability and mitigate against obsolescence for the General Purpose Automatic Test System (GPATS), Technical Manual publication, Ground Radio Maintenance Automatic Test System (GRMATS) ECPs, and Application Program Sets (APS) production that enable ATS to test multiple Marine Corps ground systems, such as the Very Small Aperture Terminal (VSAT) APS. ATS consists of both hardware and software components that provides mobile and automatic testing on Line Replaceable Units (LRU) and CCA in order to improve weapon system readiness, provide an organic maintenance solution, and decrease life cycle costs. Calibration and Maintenance Program (CAMP) \$11.916M: Funding procures two lightened Shop Equipment, Calibration (SEC), previously known as Expeditionary Calibration Facilities. These shops are designed for expeditionary deployments and use in austere environments to support MAGTF deployed operations and will provide warfighters with a lighter, smaller expeditionary calibration capability. Funding will also procure various calibration equipment. Various calibration equipment, controllers (work stations), and software must be replaced/upgraded over time in order to support and calibrate all the different test equipment used by various maintenance personnel working on USMC ground military equipment. MAGTF Logistics Support Systems (MLS2) \$10.453M: Funding continues to procure Electronic Maintenance Support Systems (EMSS) to address AAO shortfalls. FY19 funding will procure items such as Commercial Off-The-Shelf (COTS) equipment, operating software that comprises the EMSS and technical support. EMSS includes Built-In-Test/Built- In-Test Equipment (BIT/BITE) interfaces and Software Defined Test Instrument (SDTI) that enables capabilities such as storing and viewing Interactive Electronic Technical Manuals (IETMs), Computer Based Training (CBT), and other maintenance applications. EMSS also has the capability to connect to the Marine Corps Enterprise Network (MCEN) and access sites like Global Combat Support System - Marine Corps (GCSS-MC) in order to facilitate maintenance and supply transactions, thereby improving readiness. EMSS connected to the MCEN were demonstrated to provide maintainers a time savings of upwards of 15% per task and 40 minutes per day based on their average workload. Electronic Maintenance Device (EMD) hardware was broken into two separate cost elements, "EMD Hardware" and "EMD Hardware CF20". This reflects two separate procurements off of two separate USMC contracts. The EMD acquisition strategy was updated for FY19 and FY20 procurements due to an Army contract protest. As a result of the current Army contract protest, "EMD Hardware" will be procured off an existing in-house blanket purchase agreement (BPA) contract, and "EMD Hardware CF20" will be procured off a new in-house BPA that will be awarded 2QFY19. The EMD acquisition strategy change will allow the USMC to field additional systems sooner in order to reduce AAO shortages and improve maintenance capabilities for ground weapon systems. Operating software is no longer required due to a USMC enterprise transition from an end-device subscription model to an end-user subscription model. Funding re-directed to fund additional technical support requirements (See Cost Element 1.4 for details).		
FY2020 Baseline Appropriation Request: \$55.156M (ACTIVE:\$55.156M, RESERVE:\$0M)		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 7: Repair and Test Equipment		P-1 Line Item Number / Title: 4181 / Repair and Test Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0206624M
Line Item MDAP/MAIS Code: N/A		
General Purpose Tools and Test Systems (GPT&TS) \$23.753M: The GPT&TS budget procures a wide variety of portable tool kits, large tool shop sets (mounted on vehicles or trailers or contained within 20ft shelters), handheld electronic test equipment, handheld mechanical test equipment, and large mechanical test equipment contained in shelters or buildings. All of these items are commercial off the shelf or modified commercial off the shelf type equipment that are required to support the field maintenance effort of USMC ground equipment and weapon systems located within USMC expeditionary battalions and squadrons. FY20 funding continues the procurement of a new technology of Additive Manufacturing (also known as 3D printing) to enhance our existing fabrication capability using fielded machine shops. FY20 includes production of large shelter based X-FAB and the initial procurement of small portable (transit case based) TAC-FAB 3D printing capability. Increase \$10.424M from FY19 to FY20 is primarily a result of new Additive Manufacturing (3D printing) capability but also addresses the need to continue procurement efforts of additional portable electronic test sets such as Microwave Comm and Radar Test Sets, Microwave Signal Generators, Data Network Testers, Fluid analyzers and increased quantities for the Fire Bottle Refill Shops (contained in a trailer mounted 20-ft container). Funding also procures items such as engine and transmission dynamometers and fuel test stands, as well as engineering, logistics, system software support, and cyber security efforts for the entire portfolio of GPT&TS items. Increased support in FY20 aligns to the procurement and fielding plan for equipment such as X-FAB, TACFAB and multiple test sets. PB19 to PB20 change for the Operators Fluid Analysis Test Set reflects unit cost increase to support additional capability for additive hardware that will expand on the Tier I capability. Automatic Test Systems (ATS) \$9.046M: Funding will support procurement of the Circuit Card Assembly (CCA) Test Station modernized replacement system as well as Engineer Change Proposal (ECP) modernization kits to the ATS Family of Systems such as General Purpose Automatic Test System (GPATS), Ground Radio Maintenance Automatic Test System (GRMATS), and Application Program Sets (APS). These ECPs will enhance organic maintenance capabilities and mitigate against obsolescence. ATS consists of both hardware and software components that provides mobile and automatic testing on Principle End Items (PEI), Line Replaceable Units (LRU), and Shop Repairable Units (SRU) in order to improve weapon system readiness, provide an organic maintenance solution, and decrease life cycle costs of supported weapon systems. The \$0.912M decrease from FY19 to FY20 aligns to the procurement plan for Automatic Test Equipment. Calibration and Maintenance Program (CAMP) \$11.817M: Funding will procure two lighter Shop Equipment, Calibration (SEC), previously known as Expeditionary Calibration Facilities. These shops are designed for expeditionary deployments and use in austere environments to support MAGTF deployed operations. These shops will provide warfighters with a lighter, smaller, and expeditionary calibration capability. Funding will also procure various calibration equipment. Various calibration equipment, controllers (work stations), and software must be replaced/upgraded over time in order to support and calibrate all the different test equipment used by various maintenance personnel working on USMC ground military equipment. MAGTF Logistics Support Systems (MLS2) \$10.540M: Funding continues to procure Electronic Maintenance Support Systems (EMSS) to address AAO shortfalls. FY20 funding will procure items such as Commercial Off-The-Shelf (COTS) equipment, operating software that comprises the EMSS, and technical support. EMSS will emulate and/or interface with test equipment and enables capabilities such as storing and viewing Interactive Electronic Technical Manuals (IETMs), Computer Based Training (CBT), and other maintenance applications. EMSS also has the capability to connect to the Marine Corps Enterprise Network (MCEN) and access sites like Global Combat Support System - Marine Corps (GCSS-MC) in order to facilitate maintenance and supply transactions thereby improving readiness. EMSS connected to the MCEN was demonstrated to provide maintainers a time savings of upwards of 15% per task and 40 minutes per day based on their average workload. Electronic Maintenance Device (EMD) hardware was broken into two separate cost elements, "EMD Hardware" and "EMD Hardware CF20". This reflects two separate procurements off of two separate USMC contracts. The EMD acquisition strategy was updated for FY19 and FY20 procurements due to an Army contract protest. As a result of the current Army contract protest, "EMD Hardware" will be procured off an existing in-house blanket purchase agreement (BPA) contract, and "EMD Hardware CF20" will be procured off a new in-house BPA that will be awarded 2QFY19. The EMD acquisition strategy change will allow the USMC to field additional systems sooner in order to reduce AAO shortages and improve maintenance capabilities for ground weapon systems. Operating software is no longer required due to a USMC enterprise transition from an end-device subscription model to an end-user subscription model. Funding re-directed to additional technical support requirements (See Cost Element 1.4 for details). The technical support increase from FY19 to FY20 funds additional requirements such as technical support for increased EMD fielded quantities, cyber security requirements for network connected systems, enhanced diagnostic software, and to merge EMD and Vehicle Automate Diagnostic System (VADS) capabilities which will decrease system lifecycle costs and logistics footprint. OCO: FY 2018 Overseas Contingency Operations (OCO) Request: \$8.504M Automatic Test Systems (ATS) funds will be used to procure 9 Virtual Instrument Portable Equipment Repair/Tester (VIPER/T) systems. These systems are used while deployed to field test, align, and repair vehicle components for Special Purpose MAGTFs (SPMAGTF).		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7							P-1 Line Item Number / Title: 4181 / Repair and Test Equipment								Aggregated Items Title: Repair and Test Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) MAGTF Logistics Support Systems (MLS2)																				
1.1) EMD Hardware (1)(t)	A		3,637.76	196	0.713	3,635.35	850	3.090	3,635.35	626	2.276	-	-	-	-	-	-	-	-	-
1.2) EMD Hardware CF20 (2)(t)	A		-	-	-	-	-	-	4,329.10	1,577	6.827	4,415.68	1,605	7.087	-	-	-	4,415.68	1,605	7.087
1.3) Operating Software (3)	A		454.21	273	0.124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) Technical Support (4)	A		-	-	6.097	-	-	4.534	-	-	1.350	-	-	3.453	-	-	-	-	-	3.453
Subtotal: 1) MAGTF Logistics Support Systems (MLS2)			-	-	6.934	-	-	7.624	-	-	10.453	-	-	10.540	-	-	-	-	-	10.540
2) General Purpose Tools and Test Systems (GPT&TS)																				
2.1) X-FAB Additive Manufacturing Shop (3D Printers) (5)(t)	A		-	-	-	-	-	-	2,700K	1	2.700	1,350K	7	9.450	-	-	-	1,350K	7	9.450
2.2) Radio Test Set (3 GHz-Handheld)(t)	A		-	-	-	-	-	-	14,550.00	100	1.455	-	-	-	-	-	-	-	-	-
2.3) Microwave Comm and Radar Test Set (Handheld)(t)	A		-	-	-	-	-	-	26,476.92	65	1.721	26,478.26	40	1.059	-	-	-	26,478.26	40	1.059
2.4) Fire Bottle Refill Shop (6)(t)	A		-	-	-	-	-	-	-	-	-	425,000.00	3	1.275	-	-	-	425,000.00	3	1.275
2.5) Air Compressor (LUBE Unit)(t)	A		21,458.33	48	1.030	21,533.33	15	0.323	-	-	-	-	-	-	-	-	-	-	-	-
2.6) Vehicle Automated Diagnostic System (VADS) (MT-Ordnance Eng Version) (7)	A		24,856.46	418	10.390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7) VADS Instrument Controller (IC) Hardware and Software Refresh (8)	A		4,544.39	428	1.945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8) Fuel Test Stand, Test Program Sets (9)	A		-	-	0.959	-	-	1.573	-	-	0.741	-	-	0.250	-	-	-	-	-	0.250
2.9) Dynamometer Test Stand - Test Program Sets	A		-	-	-	-	-	-	-	-	0.564	-	-	0.423	-	-	-	-	-	0.423
2.10) Operators Fluid Analysis Test Set (10)(t)	A		-	-	-	-	-	-	37,000.00	60	2.220	37,000.00	50	1.850	-	-	-	37,000.00	50	1.850

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7								P-1 Line Item Number / Title: 4181 / Repair and Test Equipment							Aggregated Items Title: Repair and Test Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
2.11) Technicians Fluid Analysis Test Set ^(†)	A		-	-	-	-	-	-	100,000.00	5	0.500	100,000.00	5	0.500	-	-	-	100,000.00	5	0.500
2.12) Microwave Signal Generator ^{(11)(†)}	A		-	-	-	-	-	-	17,394.00	30	0.522	17,394.00	10	0.174	-	-	-	17,394.00	10	0.174
2.13) Data Network Tester ^{(12)(†)}	A		-	-	-	-	-	-	18,760.00	20	0.375	18,760.00	15	0.281	-	-	-	18,760.00	15	0.281
2.14) Expeditionary Fuel Test Shop ^(†)	A		-	-	-	890,000.00	1	0.890	-	-	-	890,000.00	1	0.890	-	-	-	890,000.00	1	0.890
2.15) Dynamometer Sets (Engine & Transmission) ^(†)	A		-	-	-	-	-	-	-	-	-	500,000.00	2	1.000	-	-	-	500,000.00	2	1.000
2.16) Hydraulic Component Tester ^{(13)(†)}	A		-	-	-	-	-	-	-	-	-	280,000.00	2	0.560	-	-	-	280,000.00	2	0.560
2.17) TACFAB 3D Printer Kit (previously known as TacMan 3D Printer) ^{(14)(†)}	A		-	-	-	-	-	-	-	-	-	102,180.00	25	2.555	-	-	-	102,180.00	25	2.555
2.18) GSM TMDE Systems Fielding, Training & Calibration Support - FAST Team	A		-	-	0.913	-	-	0.363	-	-	0.366	-	-	0.350	-	-	-	-	-	0.350
2.19) AN/USM-674 Circuit Card Tester (C7501) Fielding, Training & Tech Data	A		-	-	0.372	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.20) GPT&TS Eng/Soft/ Log Support ⁽¹⁵⁾	A		-	-	8.263	-	-	1.605	-	-	2.165	-	-	3.136	-	-	-	-	-	3.136
Subtotal: 2) General Purpose Tools and Test Systems (GPT&TS)			-	-	23.872	-	-	4.754	-	-	13.329	-	-	23.753	-	-	-	-	-	23.753
3) Automatic Test Systems																				
3.1) Application Program Sets/Test Program Sets	A		-	-	8.158	-	-	5.954	-	-	1.500	-	-	1.600	-	-	-	-	-	1.600
3.2) Automatic Test Equipment ⁽¹⁶⁾	A		-	-	18.369	-	-	17.042	-	-	7.041	-	-	6.110	-	-	-	-	-	6.110
3.3) ATS Engineering Support			-	-	4.669	-	-	0.992	-	-	0.558	-	-	0.523	-	-	-	-	-	0.523
3.4) ATS Software Support			-	-	2.925	-	-	0.911	-	-	0.553	-	-	0.517	-	-	-	-	-	0.517
3.5) ATS Logistic Support			-	-	0.909	-	-	0.264	-	-	0.306	-	-	0.296	-	-	-	-	-	0.296

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7							P-1 Line Item Number / Title: 4181 / Repair and Test Equipment							Aggregated Items Title: Repair and Test Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 3) Automatic Test Systems			-	-	35.030	-	-	25.163	-	-	9.958	-	-	9.046	-	-	-	-	-	9.046
4) Calibration & Maintenance Program (CAMP) ⁽¹⁷⁾																				
4.1) Calibration Control Group ^{(18)(t)}	A		-	-	-	48,000.00	12	0.576	-	-	-	-	-	-	-	-	-	-	-	-
4.2) Various Calibration Equipment ⁽¹⁹⁾	A		-	-	-	-	-	-	-	-	0.916	-	-	0.817	-	-	-	-	-	0.817
4.3) Shop Equipment, Calibration ^{(20)(t)}	A		-	-	-	-	-	-	5,500K	2	11.000	5,500K	2	11.000	-	-	-	5,500K	2	11.000
Subtotal: 4) Calibration & Maintenance Program (CAMP)			-	-	0.000	-	-	0.576	-	-	11.916	-	-	11.817	-	-	-	-	-	11.817
5) Prior Year Cum Funding																				
5.1) Prior Year Cum Funding	A		-	-	182.876	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) Prior Year Cum Funding			-	-	182.876	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	248.712	-	-	38.117	-	-	45.656	-	-	55.156	-	-	-	-	-	55.156

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

(t) indicates the presence of a P-5a

Footnotes:

(1) FY19: EMD hardware was broken into two separate cost elements: "EMD Hardware" and "EMD Hardware CF20". This reflects two separate procurements off of two separate USMC contracts. The EMD acquisition strategy was updated for FY19 procurements due to an Army contract protest. As a result of the current Army contract protest, "EMD Hardware" will be procured off an existing in-house blanket purchase agreement (BPA) contract, and "EMD Hardware CF20" will be procured off a new in-house BPA that will be awarded 2QFY19. The EMD acquisition strategy change will allow the USMC to field additional systems sooner in order to reduce AAO shortages and improve maintenance capabilities for ground weapon systems. FY18: Due to delay in Army releasing RFP 3QFY18, contract award has slipped to 1QFY19. Program office has mitigated risk by procuring EMD hardware quantities from an in-house existing contract for FY18. Program office will procure from Army contract in FY19, cost are based on Army's IGCE.

(2) New cost element in PB20 to separately identify cost due to new Blanket Purchase Agreement (BPA) contract award in FY19 and out. Quantities were originally planned to be procured on a new Army contract. Due to protest with Army contract, program plans to award on a new in-house BPA contract. Reference cost element 1.1.

(3) Operating software is no longer required in FY18 and out due to a USMC enterprise transition from an end-device subscription model to an end-user subscription model. Funding re-directed to fund additional technical support requirements (See Cost Element 1.4 for details).

(4) Technical support increase from FY19 to FY20 to fund additional requirements: technical support for increased EMD fielded quantities, cyber security requirements for network connected systems, enhanced diagnostic software, and to merge EMD and Vehicle Automate Diagnostic System (VADS) capabilities which will decrease system lifecycle costs and logistics footprint.

(5) PB2020 FY19 Qty 01 represents First Article and FY20 Qty 07 represents production units. Production Qty 07 reduced from PB2019 Exhibit Qty 09 due to updated estimated production capability limits. Cost Element was previously known as SEMS Additive Manufacturing Shop (3D printers), and was revised to X-FAB Additive Manufacturing Shop to more accurately reflect requirements documentation

(6) Fact of life decrease in FY19 Qty 01 (identified in PB2019 exhibit) to zero in FY19 (identified in PB2020 exhibit) due to vendor protests and resulting in delay of Army contract. Production of USMC assets are planned to begin in FY20.

(7) Due to acquisition strategy, Vehicle Automated Diagnostic Systems FY19 funding decreased to zero. Funding supported a new urgent requirement of Microwave Signal Generator and Data Network Tester. This acquisition strategy change was due to critical readiness issues with Microwave Satellite Comm Systems such as VSAT.

(8) Due to acquisition strategy change, funding for Vehicle Automated Diagnostic Systems (VADS) Instrument Controller (IC) hardware and software was decreased to zero to support a new urgent requirement of Microwave Signal Generator and Data Network Tester. This acquisition strategy change was due to critical readiness issues with Microwave Satellite Comm Systems such as VSAT.

(9) FY18 funding level increased by \$459K to support unfunded requirement for Fuel Test Stand Test Program Set. Funds were re-directed from the General Mechanic Tool Kits due to a canceled contract because of protest.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7	P-1 Line Item Number / Title: 4181 / Repair and Test Equipment	Aggregated Items Title: Repair and Test Equipment
⁽¹⁰⁾ The increase from PB19 to PB20 reflects funding redirected from a delayed Army contract into FY20 for Fire Bottle Refill Shops and a cancelled Army contract in FY19 for the General Mechanical Tool Kit. The FY19 Tier I quantity unit cost increased from \$33K to \$37K due to the increase of quantities to meet the AAO (139) and the inclusion of an additional capability for additive hardware that will expand on the original Tier I capability. ⁽¹¹⁾ Additional quantity and funding was added to the FY19 execution in order to satisfy an urgent priority to provide test equipment support to address readiness issues related to microwave (SATCOM) radio systems such as VSAT family. Funding moved from VADS effort (see footnote #8 & #9) ⁽¹²⁾ Additional quantity and funding was added to the FY19 execution in order to satisfy an urgent priority to provide test equipment support to address readiness issues related to microwave (SATCOM) radio systems such as VSAT family. Funding moved from VADS effort (see footnote #8 & #9) ⁽¹³⁾ New requirement to replace older hydraulic test stands with new high pressure (10,000psi) systems to test vehicle hydraulic components. ⁽¹⁴⁾ Requirement to acquire and field Tactical Fabrication (TACFAB) 3D printer kits for use at the battalion level in distributed operations. Cost Element previously known as TacMan 3D Printer is revised to TACFAB 3D Printer Kits to accurately reflect requirements documentation. ⁽¹⁵⁾ Increase from FY19 to FY20 provides engineering, software, and logistics support aligned to the procurement and fielding plan for equipment such as X-FAB, TACFAB, and multiple test sets. ⁽¹⁶⁾ The FY19 to FY20 decrease is the result of a funding increase in FY19 to procure Circuit Card Assembly (CCA) Test Stations. ⁽¹⁷⁾ New grouping for BLI 4181. Calibration & Maintenance Program (CAMP) funding will refresh and modernize calibration equipment. ⁽¹⁸⁾ Calibration Control Group (DACG) consists of laptops, printers, servers, and other ancillary items. ⁽¹⁹⁾ Various calibration equipment will be procured such as amplifiers, low and high pressure standards, audio analyzers, and meter calibrators. ⁽²⁰⁾ Cost element previously known as Expeditionary Calibration Facility.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7				P-1 Line Item Number / Title: 4181 / Repair and Test Equipment					Aggregated Items: Repair and Test Equipment			
Item Number / Title [DODIC]	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) MAGTF Logistics Support Systems (MLS2)												
1.1) EMD Hardware ^{(1)(t)}		2018	CDW Government LLC ⁽²¹⁾ / Vernon Hills, IL	C / FFP	Quantico, VA	Jun 2018	Dec 2018	850	3,635.35	Y		
1.1) EMD Hardware ^{(1)(t)}		2019	CDW Government LLC ⁽²¹⁾ / Vernon Hills, IL	C / FFP	Quantico, VA	Oct 2018	Apr 2019	626	3,635.35	Y		
1.2) EMD Hardware CF20 ^{(2)(t)}		2019	TBD / TBD	TBD	Quantico, VA	Feb 2019	Aug 2019	1,577	4,329.10	Y		
1.2) EMD Hardware CF20 ^{(2)(t)}		2020	TBD / TBD	TBD	Quantico, VA	Feb 2020	Aug 2020	1,605	4,415.68	Y		
2) General Purpose Tools and Test Systems (GPT&TS)												
2.1) X-FAB Additive Manufacturing Shop (3D Printers) ^{(5)(t)}		2019	TBD / TBD	C / FFP	Quantico, VA	Aug 2019	Aug 2020	1	2,700K	Y		Jan 2019
2.1) X-FAB Additive Manufacturing Shop (3D Printers) ^{(5)(t)}		2020	TBD / TBD	C / FFP	Quantico, VA	Mar 2020	Dec 2020	7	1,350K	Y		
2.2) Radio Test Set (3 GHz-Handheld)		2019	TBD@ TBD / TBD	C / TBD	Quantico, VA	Mar 2019	Mar 2019	100	14,550.00	Y		Jan 2019
2.3) Microwave Comm and Radar Test Set (Handheld)		2019	Keysight / Santa Rosa, CA	C / TBD	Mechanicsburg, PA	May 2019	Aug 2019	65	26,476.92	Y		Jan 2019
2.3) Microwave Comm and Radar Test Set (Handheld)		2020	Keysight / Santa Rosa, CA	C / TBD	Mechanicsburg, PA	May 2020	Dec 2020	40	26,478.26	Y		
2.4) Fire Bottle Refill Shop ⁽⁶⁾		2020	TBD / TBD	C / TBD	TACOM, Warren, MI	Sep 2020	Sep 2020	3	425,000.00	Y		
2.5) Air Compressor (LUBE Unit)		2018	ADS, Inc. / VA Beach, VA	C / FFP	Quantico, VA	May 2018	Nov 2018	15	21,533.33	Y		
2.10) Operators Fluid Analysis Test Set ⁽¹⁰⁾		2019	Spectro Scientific / Chelmsford, MA	C / FFP	Quantico, VA	Jun 2019	Jun 2020	60	37,000.00	Y		
2.10) Operators Fluid Analysis Test Set ⁽¹⁰⁾		2020	Spectro Scientific / Chelmsford, MA	C / FFP	Quantico, VA	Mar 2020	Mar 2021	50	37,000.00	Y		
2.11) Technicians Fluid Analysis Test Set		2019	Spectro Scientific / Chelmsford, MA	C / FFP	Quantico, VA	Jun 2019	Jun 2020	5	100,000.00	Y		
2.11) Technicians Fluid Analysis Test Set		2020	Spectro Scientific / Chelmsford, MA	C / FFP	Quantico, VA	Mar 2020	Mar 2021	5	100,000.00	Y		
2.12) Microwave Signal Generator ⁽¹¹⁾		2019	Keysight / Santa Rosa, CA	C / TBD	Mechanicsburg, PA	Jun 2019	Oct 2019	30	17,394.00	Y		
2.12) Microwave Signal Generator ⁽¹¹⁾		2020	Keysight / Santa Rosa, CA	C / FFP	Mechanicsburg, PA	Jan 2020	May 2020	10	17,394.00	Y		
2.13) Data Network Tester ⁽¹²⁾		2019	Viavi / Germantown, MD	C / TBD	Mechanicsburg, PA	Jun 2019	Oct 2019	20	18,760.00	Y		
2.13) Data Network Tester ⁽¹²⁾		2020	Viavi / Germantown, MD	C / FFP	Mechanicsburg, PA	Mar 2020	Jun 2020	15	18,760.00	Y		
2.14) Expeditionary Fuel Test Shop		2018	SAIC / Bedford, IN	C / FFP	NSWC, CRANE, IN	May 2018	May 2019	1	890,000.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7			P-1 Line Item Number / Title: 4181 / Repair and Test Equipment					Aggregated Items: Repair and Test Equipment				
Item Number / Title [DODIC]	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
2.14) Expeditionary Fuel Test Shop		2020	SAIC / Bedford, IN	C / FFP	NSWC, CRANE, IN	May 2020	Aug 2020	1	890,000.00	Y		
2.15) Dynamometer Sets (Engine & Transmission)		2020	TBD / TBD	C / CPIF	Philadelphia, PA	Apr 2020	Jul 2020	2	500,000.00	Y		
2.16) Hydraulic Component Tester (13)		2020	TBD / TBD	C / TBD	Philadelphia, PA	Jun 2020	Dec 2020	2	280,000.00	Y		
2.17) TACFAB 3D Printer Kit (previously known as TacMan 3D Printer) (14)		2020	TBD / TBD	C / TBD	TBD	Aug 2020	Feb 2021	25	102,180.00	Y		
4) Calibration & Maintenance Program (CAMP)												
4.1) Calibration Control Group (18)		2018	DELL Federal Systems / Round Rock, TX	C / FFP	NSWC, Corona, CA	Jan 2018	Aug 2018	12	48,000.00	Y		
4.3) Shop Equipment, Calibration (20)(†)		2019	CERDEC / Aberdeen, MD	MIPR	Aberdeen, MD	Feb 2019	Feb 2020	2	5,500K	Y		
4.3) Shop Equipment, Calibration (20)(†)		2020	CERDEC / Aberdeen, MD	MIPR	Aberdeen, MD	Jan 2020	Jul 2020	2	5,500K	Y		
†) indicates the presence of a P-21												
Footnotes:												
(21) MSR for multiple program offices procured off of the same contract.												

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019															
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7										P-1 Line Item Number / Title: 4181 / Repair and Test Equipment										Aggregated Items: Repair and Test Equipment															
Items (Units in Each)							Fiscal Year 2018										Fiscal Year 2019													B A L A N C E					
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018																Calendar Year 2019												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P				
1) MAGTF Logistics Support Systems (MLS2)																																			
1.1) EMD Hardware ⁽¹⁾																																			
Prior Years Deliveries: 196																																			
	8	2018	NAVY	850	0	850											A	-	-	-	-	-	-	150	150	150	150	150	100					0	
	8	2019	NAVY	626	0	626											A	-	-	-	-	-	-	-	-	-	150	150	150	150	26			0	
1.2) EMD Hardware CF20 ⁽²⁾																																			
	9	2019	NAVY	1,577	0	1,577											A	-	-	-	-	-	-	-	-	-	-	-	-	250	250	1,077			
	9	2020	NAVY	1,605	0	1,605																										1,605			
2) General Purpose Tools and Test Systems (GPT&TS)																																			
2.1) X-FAB Additive Manufacturing Shop (3D Printers) ⁽⁵⁾																																			
	10	2019	NAVY	1	0	1																					A	-	-	1					
	10	2020	NAVY	7	0	7																					7								
4) Calibration & Maintenance Program (CAMP)																																			
4.3) Shop Equipment, Calibration ⁽²⁰⁾																																			
	11	2019	NAVY	2	0	2											A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			
	11	2020	NAVY	2	0	2	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	2				

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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7										P-1 Line Item Number / Title: 4181 / Repair and Test Equipment														Aggregated Items: Repair and Test Equipment													
Items (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												B A L A N C E						
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020																		Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
1) MAGTF Logistics Support Systems (MLS2)																																					
1.1) EMD Hardware ⁽¹⁾																																					
Prior Years Deliveries: 196																																					
	8	2018	NAVY	850	850	0																											0				
	8	2019	NAVY	626	626	0																											0				
1.2) EMD Hardware CF20 ⁽²⁾																																					
	9	2019	NAVY	1,577	500	1,077	250	250	250	250	77																						0				
	9	2020	NAVY	1,605	0	1,605	A -					-	-	-	-	-	-	250	250	250	250	250	250	105					0								
2) General Purpose Tools and Test Systems (GPT&TS)																																					
2.1) X-FAB Additive Manufacturing Shop (3D Printers) ⁽⁵⁾																																					
	10	2019	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	1																0				
	10	2020	NAVY	7	0	7	A -					-	-	-	-	-	-	-	-	-	-	7											0				
4) Calibration & Maintenance Program (CAMP)																																					
4.3) Shop Equipment, Calibration ⁽²⁰⁾																																					
	11	2019	NAVY	2	0	2	-	-	-	-	2																						0				
	11	2020	NAVY	2	0	2	A -					-	-	-	-	-	2																	0			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 7					P-1 Line Item Number / Title: 4181 / Repair and Test Equipment				Aggregated Items: Repair and Test Equipment		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	CDW Government LLC ⁽²¹⁾ - Vernon Hills, IL	300	600	900	0	0	6	6	0	0	6	6
2	TBD - TBD	1,000	1,500	2,000	0	0	6	6	0	0	6	6
3	TBD - TBD	1	5	8	0	0	12	12	0	0	9	9
4	CERDEC - Aberdeen, MD	1	2	3	0	4	12	16	0	0	6	6

"A" in the Delivery Schedule indicates the Contract Award Date.

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

Footnotes:

⁽²¹⁾ MSR for multiple program offices procured off of the same contract.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 9: Other Support (Tel)	P-1 Line Item Number / Title: 4652 / Modification Kits

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	19.195	0.750	0.971	4.945	0.000	4.945	1.007	0.000	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	19.195	0.750	0.971	4.945	0.000	4.945	1.007	0.000	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	19.195	0.750	0.971	4.945	0.000	4.945	1.007	0.000	0.000	0.000	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Identity Dominance System-MC (IDS-MC) is a multi-modal (fingerprint, iris and face) biometric collection system that provides the United States Marine Corps (USMC) a reliable and effective capability to collect, share, match, access, verify, and store identity information. IDS-MC will enable the Marine to collect appropriate biometric, biographical and reference information on an individual and match this locally developed information with pre-existing information available to the expeditionary force. The system will display match results with linkage to the respective individual's biographical and reference information as well as help to analyze the response, update records as appropriate, create reports, and disseminate updated information in accordance with current Marine Air-Ground Task Force (MAGTF) policy. The primary mission of IDS-MC is to provide the MAGTF with the means to identify persons encountered in the battlespace. While IDS-MC is not an intelligence analysis system, it does provide identification information in support of military intelligence and law enforcement operations by providing positive identification of persons of interest. IDS-MC is an enabler in the areas of detainee management and questioning, base access, counterintelligence screening, border control, law enforcement, displaced persons' management and aiding in humanitarian assistance missions. IDS-MC supports the tactical application of identity dominance and fully supports a forward presence, crisis response and contingency response capability.

Expeditionary Forensic Exploitation Capability (EFEC) is a portable, expeditionary laboratory capable of conducting Level I and II forensics analysis of captured enemy material, evidence and information. It is comprised of 4 Table of Authorized Material Control Numbers (TAMCN), which include Chemical, Media, and Site Exploitation, and a Laboratory kit.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 9: Other Support (Tel)						P-1 Line Item Number / Title: 4652 / Modification Kits				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Modification Kits				- / 19.195	- / 0.750	- / 0.971	- / 4.945	- / 0.000	- / 4.945
P-40	Total Gross/Weapon System Cost				- / 19.195	- / 0.750	- / 0.971	- / 4.945	- / 0.000	- / 4.945
*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: Prior to FY19, IDS-MC funding is included in BLI 6438, Physical Security Equipment. FY2018 Base Appropriation Request: N/A FY2019 Base Appropriation Request: \$0.971M Identity Dominance System-MC (IDS-MC): \$0.971M to initiate procurement of the hardware and software for IDS-MC Increment 2 in accordance with a MS C/FRP procurement decision. FY19 increase is due to realignment from BLI 6438 to 4652. Realignment of effort to new BLI in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. FY2020 Baseline Appropriation Request: \$4.945M Identity Dominance System-MC (IDS-MC): \$4.945M will procure the full system (Hardware and Software) for IDS-MC Increment 2. IDS-MC Increment 2 is a multi-modal identity system that provides the Marine Air-Ground Task Force (MAGTF) the ability to collect, match, store, and share biometric data in support of operations. The IDS-MC program strategy is evolutionary, structured to deliver capabilities incrementally, recognizing the need for future capability improvements. The increase from FY19 to FY20 is due to the procurement of full system hardware and associated software. OCO: FY2018 Overseas Contingency Operations (OCO) Request: \$0.750M Expeditionary Forensic Exploitation Capability (EFEC) will procure hardware for replacement of legacy obsolete IT equipment and other peripherals such as Sabre 5000 Handheld Trace Detectors for explosives, chemical agents and toxic industrial chemicals and narcotics. Forensics Exploitation has become a key capability in counter insurgency (COIN) warfare. This system provides the Marine Corps the ability to provide the Combatant Commander with required Identity Operations/Biometrics/Forensics capabilities identified in COCOM CONOPS, CONPLANS/OPLANS, and Theater Campaign Plans in support of the Joint Force requirement.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 9							P-1 Line Item Number / Title: 4652 / Modification Kits						Item Number / Title [DODIC]: 1 / Modification Kits					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				19.195		0.750		0.971		4.945		0.000		4.945				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				19.195		0.750		0.971		4.945		0.000		4.945				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				19.195		0.750		0.971		4.945		0.000		4.945				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Expeditionary Forensics and Exploitation	-	-	-	-	-	0.750	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2) Prior Year Cumulative Funding	-	-	19.195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	19.195	-	-	0.750	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	-	-	19.195	-	-	0.750	-	-	-	-	-	-	-	-	-	-	-	-
Hardware Cost																		
Recurring Cost																		
2.1.1) IDS Marine Corps Increment II Hardware ⁽¹⁾	-	-	-	-	-	-	-	-	0.250	-	-	1.200	-	-	-	-	-	1.200
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	0.250	-	-	1.200	-	-	-	-	-	1.200
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	0.250	-	-	1.200	-	-	-	-	-	1.200
Software Cost																		
Recurring Cost																		
3.1.1) IDS Marine Corps Software ⁽²⁾	-	-	-	-	-	-	-	-	0.721	-	-	3.745	-	-	-	-	-	3.745
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	0.721	-	-	3.745	-	-	-	-	-	3.745
Subtotal: Software Cost	-	-	-	-	-	-	-	-	0.721	-	-	3.745	-	-	-	-	-	3.745
Gross/Weapon System Cost	-	-	19.195	-	-	0.750	-	-	0.971	-	-	4.945	-	-	0.000	-	-	4.945

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 9	P-1 Line Item Number / Title: 4652 / Modification Kits	Item Number / Title [DODIC]: 1 / Modification Kits
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Remarks: [L2:SW]		
Footnotes: (1) \$1.2M in FY20 will be used to procure the full system IT Asset hardware. (2) \$3.745M in FY20 will be used to procure the full system software licenses.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)							P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0502514M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	70.147	43.294	67.428	112.124	0.000	112.124	89.967	67.175	65.683	66.996	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	70.147	43.294	67.428	112.124	0.000	112.124	89.967	67.175	65.683	66.996	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	70.147	43.294	67.428	112.124	0.000	112.124	89.967	67.175	65.683	66.996	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Funding supports the procurement of communication and electrical items such as cameras, reproduction equipment, laptops, software, satellite dishes, and items/upgrades with a unit cost under \$5M in support of the Marine Corps. Combat Camera Systems (CCS) - Provides equipment to Fleet Marine Force (FMF) Combat Camera Units and training commands. This imagery acquisition/production equipment is used for collecting, editing and dissemination of imagery used to support the Marine Air Ground Task Force (MAGTF), to include Department of Defense (DoD), Joint and Marine Forces, and supporting establishments. This program standardizes equipment/systems and replaces worn out, unserviceable or obsolete acquisition/production equipment. Procurements are centrally managed and are non-developmental, Commercial/Government Off-the-Shelf (COTS/GOTS). Public Affairs System (PAS) - Public Affairs (PA) provides the MAGTF and the broader Marine Corps the capability to research, understand and affect the information environment. PA Marines and Systems enable commanders at all levels and across the range of military operations to engage domestic and foreign publics whose trust, confidence, and understanding are mission critical. The Public Affairs Systems (PAS) Abbreviated Acquisition Program (AAP) identifies and fields materiel solutions required to research and plan communication initiatives, acquire still and video visual information, produce and disseminate communication products, and assess the effects of communication initiatives within the information environment. The program maintains an evolutionary approach to acquisitions, and leverages commercial industry-standard non-developmental items to provide the best value to the Marine Corps, while keeping PA Marines appropriately equipped to understand and affect the information environment. Marine Civil Information Management System (MARCIMS) - MARCIMS is a system of systems comprised of people, process and technology that operates in the full Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment. It is a force multiplier which allows the Commander to leverage the process of Planning, Collection, Consolidation, Analysis, Production, and sharing of civil information to support the visualization and understanding of the civil environment to the military Commander's decision making process. Program name has changed from Civil Affairs Capability Set and Civil Affairs Information Data Processing System (CIMDPS). Military Information Support Operations (MISO) Family of Systems (FOS), which consists of the Fly-Away Broadcast System (FABS), Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MISN), provides the Marine Air Ground Task Force (MAGTF) Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. The MISO was established in response to multiple Marine Requirements Oversight Council Memorandums, and the approval of a MISO Organizational and Operational (O&O) Concept, 16 June 2015. MISO capabilities are critical to the success of the MAGTF mission,												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)		P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0502514M
Line Item MDAP/MAIS Code: N/A		
enabling commanders to shape the information environment, counter enemy propaganda, misinformation, disinformation, and adversarial narratives. The Signature Management (SIGMAN) capability will support MAGTF Operations with a baseline capability to include Own-force signature monitoring and assessment, Electromagnetic signature masking and projection, and physical decoys. Safety: Risk Management Information (RMI) initiative to deploy a Department of Navy (DON)-wide, web based solution facilitating unit-level Safety Program management and provides aggregate reporting, analysis, and tracking of all hazards and reportable mishaps. IAW 2011 Federal Cloud Computing Strategy and guidance by the DON Chief Information Officer, RMI will involve the fielding of an overarching, single site safety portal or architecture critical for complying with OSD safety reporting requirements and for allowing seamless on-demand access to the pool of existing safety and safety-related databases. MAGTF Logistics Support Systems (MLS2) - Transportation Systems Portfolio (TSP) are the current and future LOG IT capabilities used primarily to provide logistics support to the Marine Air Ground Task Force (MAGTF) from garrison, operating bases, the sea base, and during expeditionary operations ashore. TSP enables tactical and operational level Life Cycle Management (LCM) and Command and Control (C2). MLS2s provides the MAGTF the capability to capitalize on Naval Logistics Integration and interoperate with joint and coalition logistics partners and providers. TSP provides the Information Technology (IT) systems essential for enabling several of the top-10 prioritized Tier II capabilities identified in Expeditionary Force 21 (EF21). The systems identified provide the data and interfaces required to provide end-to-end (E2E) integration of distribution support to expedite the flow of equipment and supplies for the Operating Forces. Includes: (1) synchronizing storage activities, distribution nodes, and transportation modes in the logistics chain, (2) integrating organic Service, DoD and commercial providers and transportation systems, (3) maximizing in-transit visibility capabilities to track, trace, and expedite equipment and supplies, and (4) placing advocates to support force deployment, sustainment, and retrograde operations. Enterprise Logistics Support Systems (ELS2) - Radio Frequency Identification (RFID) devices encompass a variety of read and write data storage technologies that are used to improve accuracy, timeliness, and handling. These technologies are key in and provide near-real time Total Asset Visibility data used to influence critical decisions by Operational Commanders. RFID enhances our force in readiness by coordinating, synchronizing and automatically transferring data by means of Active Radio Frequency Identification (aRFID), as well as the software required to create and manage the devices, collect the information and integrate that information with other logistics data. These devices can be interrogated using a variety of means, including fixed infrastructures and portable systems. The information obtained from those interrogations is provided electronically to various Automated Information Systems (AIS). The RFID project provides procurement and life cycle management of the current RFID Infrastructures, and provides RFID Hardware and Software under the Joint Army Product Director Automated Movement and Identification Solutions (PD AMIS) Procurement Office. Prior to FY18, RFID was funded within the MLS2 portfolio. Combat Optics - This program encompasses all optical systems providing handheld, helmet, and weapon-mounted optic systems such as various thermal, low light image intensifier (I2) - to include night vision goggles (NVGs), magnified optical, laser range-finding, illuminating, short wave infrared (SWIR), and pointer functionalities. Thermal imagers can be used not only for target detection and engagement with Marine Corps individual and crew-served weapons, they can be used for all-weather surveillance as well. Combat Optics allow the dismounted Marine the ability to acquire, locate, identify, and engage targets during daylight and limited visibility conditions, and perform navigation and manual tasks during limited visibility conditions utilizing ambient or covert illumination. Additionally, the portfolio includes procurement of ammunition to support testing and evaluation of night vision equipment. The program coordinates with United States Services on optic, thermal, and night vision technologies. Manpower Operations Systems (MOS) - MOS is a portfolio of enterprise information technology systems and modules that support manpower business operations for the Total Force (active and reserve). The investment funding in the portfolio improves dataflow and increases reliability, functionality, and accuracy of data while reducing the manpower required to operate and maintain these systems/operations. Development is partially driven by regulatory and policy changes mandated by Congress, DoD, DoN, and USMC. The systems support all five tiers of Manpower: Individual Marine; Small Unit Leader; Unit, Installation Personnel Administration Center/Disbursing Echelon; Headquarters Marine Corps Manpower and Reserve Affairs/ Department of Finance Accounting Service. The MOS portfolio provides support in functional areas such as Permanent Change of Station assignments, retention, mobilization, manpower planning, line of duty determination, personnel accountability, individual augmentation, personnel records management and maintenance, management of case incidents, civilian professional development planning, pay entitlement determinations, promotion and performance evaluations and self service/ visibility of personnel data. MOS interfaces with other systems to provide manpower data and web services functionality for pay and personnel transactions between systems. Systems in the portfolio include Web-enabled Manpower Assignment Support System, Performance Evaluation System, Total Force Retention System, Optical Digital Imaging- Records Management System, Automated Performance Evaluation System and the Manpower Mobilization Assignment System. Additionally, the portfolio includes Total Force Administration System associated modules: including Drill Management Module and Secure Personnel Accountability Module. Test, Evaluation,& Engineer Environment (TEEE) - Marine Corps Tactical Systems Support Activity (MCTSSA) provides the only Marine Corps organic, operationally relevant, MAGTF Command, Control, Communications, Computers, and Intelligence (C4I) architecture for enterprise-level testing, engineering, analysis, troubleshooting, and solutions. This environment is the sole solution in the Marine Corps		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)						P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0502514M				
Line Item MDAP/MAIS Code: N/A										
for Link-16 Tactical Data Link Networks for air-to- air, ship, and shore targeting and messaging, validated at MCTSSA before Marine/Navy use in theater. The environment also provides Marine Corps organic equipment, environments, operators, and testers for Joint Communications Exercises, Joint Interoperability Testing, Tactical Cloud Implementation, Cyber Developmental Testing, Naval Integration, tactical networking/voice, and System of Systems testing. Funding supports modernization and expansion of the MAGTF Systems Integration Environment at MCTSSA for non-Table of Equipment items: Communications Backbone, Network Backbone, Tactical Cloud Integration Backbone, Test and Engineer Tool/Data Collection Hardware/Software, and Computers. The environment is essential to operating forces support for fielded C4I systems, as well as evaluating USMC and Joint C4I systems in a controlled, repeatable, and re-configurable manner that reduces program risk and identifies significant deficiencies prior to fielding to the operating forces. More than forty Marine Corps C4I programs and systems rely on MCTSSA support. Item Unique Identification (IUID) - Provides the necessary hardware to exploit an IUID enabled ground fleet inventory of equipment and material. This capability will allow for the identification and tracking of tangible items by using the Unique Item Identifiers (UIIs) used globally as a common key. IUID will improve logistics functions for operational commanders, program managers, equipment accountability managers, maintainers and force planners, as well as, ensure accurate systems valuation to support a clean financial audit. Marine Corps Information Operation Program (MCIOP) - provides MAGTF commanders and the Marine Corps a responsive and effective full-spectrum information operations (IO) planning and psychological operations delivery capability by means of deployable support teams and a comprehensive general support IO reach-back capability in order to integrate IO into Marine Corps operations. Multiple classification levels require separate Information Technology (IT) infrastructure to support each classification level in accordance with National Security Agency and Defense Intelligence Agency standards. This includes equipment necessary for connecting internal MCIOC IT infrastructure (voice, video, and data) with the existing Marine Corps Base Quantico support infrastructure. Transitioned from BLIs 4631 and 4635 in FY19.										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	43.248	67.380	112.075	-	112.075	89.916	67.125	65.632	66.944
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.046	0.048	0.049	-	0.049	0.051	0.050	0.051	0.052
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	43.294	67.428	112.124	-	112.124	89.967	67.175	65.683	66.996

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)					P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0502514M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Items under \$5 million (Comm & Elec)	P-5a, P-21			- / 70.147	- / 43.294	- / 67.428	- / 112.124	- / -	- / 112.124
P-40	Total Gross/Weapon System Cost				- / 70.147	- / 43.294	- / 67.428	- / 112.124	- / 0.000	- / 112.124
*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: Beginning in FY19, MCIOP and TEEE funding has been realigned from BLI 4635 COMM & ELEC INFRASTRUCTURE SUPT, to BLI 4620, ITEMS UNDER \$5 MILLION (COMM & ELEC).										
FY2018 Base Appropriation Request: \$43.294M (\$43.248M Active; \$.046M Reserve)										
Combat Camera Systems (CCS) \$1.553M - Funds will procure the following in FY18: Expeditionary Deployable Production Systems (EDPS) which equips Marines with a high-powered computing and processing capability to edit, store, retrieve, and transfer operational imagery in multiple formats. Expeditionary Combat Photography Systems (ECPS) which enable Marines with imagery acquisition in day or low-light conditions, imagery processing and storage, and production and transfer capability in support of audiovisual communication requirements (13 systems). Expeditionary Combat Video Systems (ECVS) which enables Marines with video acquisition in day or low-light conditions, video processing and storage, and production and transfer capability in support of operational audiovisual communication requirements (9 systems).										
Public Affairs System (PAS) \$3.482M (\$3.436M Active; \$0.046M Reserves) - Funding provides Public Affairs Content Creation System (PACCS) Next Generation of digital camera system in order to support equipment modernization and obsolescence life cycle. PACCS provides image and video acquisition and editing capabilities for active and reserve component commands. Funding procured (4) PALMES and modernization of currently fielded PALMES. PALMES provides MAGTF and Supporting Establishment commanders the capability to transmit approved Public Affairs products, such as high-resolution video and to conduct live television and media interviews via satellite.										
Combat Optics - \$36.264: Congressional action added \$20M to procure the Long Range Sniper Rifle Night Sight (LRSRNS). This capability increases the lethality of the Mk13 Mod 7 Long Range Sniper Rifle by enabling target identification of a NATO man-sized target at extended ranges. Funding (\$4.6M) also supports the continued procurement of Sniper Range Finder (SRF) systems. The SRF allows the scout sniper and infantry squad leader to rapidly determine range out of the maximum effective range of Marine Corps sniper weapons for North Atlantic Treaty Organization (NATO) standard man and vehicle size targets while the systems is mounted to any of the Marine Corps sniper rifles, infantry rifles, or to the Scout Sniper Observation Telescope (SSOT). It also contains an aiming laser capability to give the operator the ability to point to targets at nights and conduct boresighting during the day. Funds also continue to support the procurement of Rifle Combat Optics (RCO)that are damaged beyond economic repair. The Squad Binocular Night Vision Goggle (SBNVG) is a helmet-mounted or handheld, battery-operated Night Vision Goggle (NVG) that combines the capabilities of Image-Intensification (I2) and Thermal Imaging. The SBNVG is a capability that is provided to each Marine Rifle Team and enables the ability to detect and recognize targets during limited visibility, thereby increasing lethality and the probability of mission success (particularly in extremely low light levels, weather, and obscurants).										
Enterprise Logistics Support Systems (ELS2) - \$0.253M: FY18 funding supports the continued Procurement of RFID hardware in support of the migration of aRFID Legacy to RFID Land (MCEITS). Prior to FY18, this funding line was within MAGTF Logistics Support Systems (MLS2).										
Manpower Operations Systems (MOS) - \$1.868M: FY18 funding supports procurement of IT hardware, software and fielding support for the systems in the MOS portfolio.										
FY2019 Base Appropriation Request: \$67.428M (\$67.380M Active; \$.048M Reserve)										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)		P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0502514M
Line Item MDAP/MAIS Code: N/A		
Combat Camera Systems (CCS) \$2.575M Active - In FY19 funding supports the procurement of Expeditionary Deployable Production Systems (EDPS) which equips Marines with a high-powered computing and processing capability to edit, store, retrieve, and transfer operational imagery in multiple formats. Increase \$1.022M from FY18 to FY19 supports the procurement of Tactical Imagery Production Suite (TIPS) components and initial support; TIPS enables extensively trained COMCAM documentation and production teams with increased capability to acquire, process, develop, reproduce, archive, distribute in hardcopy or multiple electronic formats digital still and motion media products as primary suppliers of operational imagery reinforcing distributive operations. Public Affairs System (PAS) \$0.917M (\$0.869M Active; \$0.048M Reserves) - Funding provides Public Affairs Content Creation System (PACCS) Next Generation of digital camera system in order to support equipment modernization and obsolescence life cycle. PACCS provides image and video acquisition and editing capabilities for active and reserve component commands. Funding will procure 2 PALMES and modernization of currently fielded PALMES and Public Affairs Laptop (PAL). PALMES provides MAGTF and Supporting Establishment commanders the capability to transmit approved Public Affairs products, such as high-resolution video and to conduct live television and media interviews via satellite. Decrease of \$2.565M from FY18 to FY19 reflects completion of PACCS procurement. Marine Civil Information Management System (MARCIMS) \$0.296M Active - Funding supports the procurement of mobile devices and mobile devices management licenses as part of the MARCIMS refresh cycle. Beginning in FY19 MARCIMS mobile devices will be refreshed every two years. Funding will procure additional virtual private cloud components as part of the expanding capability of MARCIMS across the coalition and joint force, components and support post production integration with other applications and cloud storage. This capability supports real-world operations and overseas contingencies that require a civil military presence, such as humanitarian assistance and disaster relief operations. Increase of \$0.296M supports the every-other-year refresh of MARCIMS mobile devices. Military Information Support Operations (MISO) Family of Systems (FOS) \$2.976M Active - Increase of \$2.976M from FY18 to FY19 procures the Fly-Away Broadcast System (FABS) and MISO equipment such as Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MSIN) and initial support, which provides the MAGTF Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. FY19 also funds Signature Management (SIGMAN) equipment to provide a capability to include Own-force signature monitoring and assessment, Electromagnetic signature masking and projection, and physical decoys. Combat Optics - \$59.052M Active Increase of \$22.788M from FY18 to FY19 supports the procurement of the entire Squad Thermal System (STS) AAO and the continued procurement of Squad Binocular Night Vision Goggles (SBNVG). The STS will provide an individual thermal imaging capability of the Marine Rifle Squad and the Marine Reconnaissance Team while engaging in offensive and defensive operations. The STS will be employed as a weapon mounted clip-on thermal sight that can be used in conjunction with the AN/PVQ-31 A/B RCO, and also serves as a lightweight, pocket-sized hand-held thermal imager. This will enable fire team leaders and reconnaissance team leaders to detect and recognize potential targets, danger areas, and items of interest. Marines will be able to employ the STS during most atmospheric and lighting conditions, including total darkness. The Squad Binocular Night Vision Goggle is a helmet-mounted or handheld, battery-operated Night Vision Goggle (NVG) that combines the capabilities of Image-Intensification (I2) and Thermal Imaging. The SBNVG is a capability that will be provided to each Marine Rifle Team and will enable the ability to detect, recognize, and engage targets during limited visibility, thereby increasing lethality and the probability of mission success (particularly in extremely low light levels, weather, and obscurants). Manpower Operations Systems (MOS) - \$0.246M Active FY19 funding will support procurement of IT hardware, software and fielding support for the systems in the MOS portfolio. TEST, EVALUATION, & ENGINEERING ENVIRONMENT - EQUIPMENT & TECHNICAL SERVICES (TEEE) - \$.748M Active Funding supports continued maintenance and expansion of the MAGTF Systems Integration Environment at MCTSSA for non-Table of Equipment Items: Communications Backbone, Network Backbone, Tactical Cloud Integration Backbone, Test and Engineer Tool/Data Collection Hardware/ Software, enterprise-level tactical networking/ software application support for tactical and garrison networks, and Computers. MARINE CORPS INFORMATION OPERATIONS PROGRAM (MCIOP) - FY19 \$.382M Active Funds will support a variety of efforts related to the Marine Corps Information Operations Center(MCIOC). Combined Unit Exercise (CUX) expansion: the CUX is currently being certified as the sole Joint Information Operations (IO) exercise in the Department of Defense. This funding will be used to purchase additional non-Marine Corps Enterprise Network (MCEN) computer assets that will be operated on a closed, exercise-only network. Voice Over Internet Protocol (VOIP) Transition: Servers and telephones; The MCIOC currently utilizes Secure Terminal Equipment (STE) telephones for non-secure telephone calls. The STE telephones were originally envisioned to provide an additional secure voice capability that no longer meets mission requirements. The transition to VOIP telephones will provide a more user-friendly telephone capability for users that can be centrally configured by network administrators to maintain Operational Security. Lifecycle Open Source Intelligence System (OSIS) and Joint Worldwide Intelligence Communications System (JWICS) replacement systems: The MCIOC is responsible for purchasing our own computer assets and equipment for the OSIS and JWICS networks. This funding line is allocated towards replacement systems as existing systems reach the end of their service life.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
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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: 0206313M, 0502514M
Line Item MDAP/MAIS Code: N/A		
Enterprise Logistics Support Systems (ELS2) - FY19 \$0.236M Active funding will support the installs and continued purchase of Iridium Modems and Field Data Units for the transition of aRFID dial up to Marine Corps to PL AMIS Army. This effort provides in-transit visibility (ITV) for cargo shipments throughout the world. Additionally, this provides commanders with an overall strategic picture of the current status of their shipments. FY2020 Base Appropriation Request: \$112.124M (\$112.075M Active; \$0.049 Reserve) Combat Camera Systems (CCS) - \$3.463M Active: In FY20 funding will support the procurement of additional Expeditionary Deployable Production Systems (EDPS) components which equips Marines with a high-powered computing and processing capability to edit, store, retrieve, and transfer operational imagery in multiple formats (123 systems). Increase of \$0.888M from FY19 to FY20 reflects the continued procurement of the Tactical Imagery Production Suite (TIPS) system components. Public Affairs System (PAS) - \$0.691M (\$0.642M Active; \$0.049M Reserves): Funding provides for the continued procurement of Public Affairs Content Creation System (PACCS) Next Generation of digital camera system in order to support equipment modernization and obsolescence life cycle. PACCS provides image and video acquisition and editing capabilities for active and reserve component commands. Funding will procure 1 PALMES spare and continue modernization efforts of currently fielded PALMES. PALMES provides MAGTF and Supporting Establishment commanders the capability to transmit approved Public Affairs products, such as high-resolution video and to conduct live television and media interviews via satellite. Decrease of \$0.226M reflects the completion of the Public Affairs Laptop (PAL) procurement. Military Information Support Operations (MISO) Family of Systems (FOS) - \$8.364M Active: Increase of \$5.388M from FY19 to FY20 supports continued procurement of the Fly-Away Broadcast System (FABS) and MISO equipment such as Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MSIN) and initial support, which provides the MAGTF Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. FY20 also funds procurement of Signature Management (SIGMAN) commercial off-the-shelf equipment to provide a capability to include Own-force signature monitoring and assessment, Electromagnetic signature masking and projection, and physical decoys. TEST, EVALUATION, & ENGINEERING ENVIRONMENT - EQUIPMENT & TECHNICAL SERVICES (TEEE) - \$0.903M Funding supports continued maintenance and expansion of the MAGTF Systems Integration Environment at MCTSSA for non-Table of Equipment Items: Communications Backbone, Network Backbone, Tactical Cloud Integration Backbone, Test Tool/Data Collection Hardware/Software, Computers, MAGTF Afloat Integration Environment components, and Cyber Developmental testing toolkits. Increase of \$0.155M from FY20 allows MCTSSA to continue sustainment of critical lab network infrastructure; replicate representative MAGTF architectures; implement a deployed cloud testing environment, sustain MCEN Planning Yard infrastructure; support a collaborative enterprise effort to test and engineer the MCEN from a performance, security, and resiliency aspect; sustain Naval Integration infrastructure; sustain enterprise-level tactical and garrison networking/ software application support, and modernize the virtualization stacks of Consolidated Afloat Network and Enterprise Services (CANES),Integrated Shipboard Network System (ISNS), Automated Digital Network System (ADNS). MARINE CORPS INFORMATION OPERATIONS PROGRAM (MCIOP) - FY20 \$0.371M funding will be used to refurbish MCIOC's out-of-warranty A/V system. MCIOC will expand their TS VTC capability to better support the growing operational requirements of deployed teams and will update their facilities to better support Deputy Commandant for Information's requirement to coordinate Information Environment Operations across the Marine Corps. Enterprise Logistics Support Systems (ELS2) - FY20 \$0.210M: FY20 funding will support the installs and continued purchase of Iridium Modems and Field Data Units for the transition of aRFID dial up to Marine Corps to PL AMIS Army. This effort provides in-transit visibility (ITV) for cargo shipments throughout the world. Additionally, this provides commanders with an overall strategic picture of the current status of their shipments. Combat Optics - \$98.122M: an increase of \$39.070M from FY19 to FY20 supports three major procurements, the Squad BNVG (SBNVG), Squad Thermal System, and Squad Common Optic. The SBNVG is a helmet-mounted or handheld, battery-operated Night Vision Goggle (NVG) that combines the capabilities of Image-Intensification (I2) and Thermal Imaging. The SBNVG is a capability that will be provided to each Marine Rifle Team and will enable the ability to detect, recognize, and engage targets during limited visibility, thereby increasing lethality and the probability of mission success (particularly in extremely low light levels, weather, and obscurants). FY20 funding supports the continued procurement of the entire Squad Thermal System (STS) AAO. The STS will provide an individual thermal imaging capability to		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)		P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0502514M
Line Item MDAP/MAIS Code: N/A		
the Marine Rifle Squad and the Marine Reconnaissance Team while engaging in offensive and defensive operations. The STS will be employed as a weapon mounted clip-on thermal sight that can be used in conjunction with the AN/PVQ-31 A/B and M7 Rifle Combat Optics (RCO), and also serves as a lightweight, pocket-sized hand-held thermal imager. FY20 funding supports initial procurement of the Squad Common Optic (SCO) which is a continuation of the Rifle Combat Optic (RCO). The SCO will be a variable-powered rifle sight designed for use with all 5.56mm service rifles. It will provide the Marine with an enhanced targeting capability to identify and engage daylight and near low-light targets during close quarters combat and throughout the maximum effective range of the weapon system. OCO: FY2018 Overseas Contingency Operations (OCO) Request: \$0.160M (\$0.160M Active) Public Affairs Systems procured 1 Public Affairs Live Media Engagement (PALMES) system.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14								P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)							Aggregated Items Title: Items under \$5 million (Comm & Elec)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Prior Year Cumulative Funding																				
1.1) Prior Year Cumulative Funding	A		-	-	16.337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) Prior Year Cumulative Funding			-	-	16.337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) Combat Camera Systems																				
2.1) Tactical Imagery Production System (TIPS) ⁽¹⁾	A		-	-	13.333	-	-	0.512	-	-	2.062	-	-	2.944	-	-	-	-	-	2.944
2.2) Expeditionary Deployable Production System (EDPS) ^(†)	A		48,000.00	28	1.344	-	-	-	3,066.00	123	0.377	3,066.00	123	0.377	-	-	-	3,066.00	123	0.377
2.3) Expeditionary Combat Photography System (ECPS) ^(†)	A		106,151.52	33	3.503	37,303.03	9	0.336	-	-	-	-	-	-	-	-	-	-	-	-
2.4) Expeditionary Combat Video System (ECVS) ^(†)	A		19,330.40	227	4.388	39,140.00	13	0.509	-	-	-	-	-	-	-	-	-	-	-	-
2.5) Non-recurring Items	A		-	-	0.625	-	-	0.196	-	-	0.136	-	-	0.142	-	-	-	-	-	0.142
Subtotal: 2) Combat Camera Systems			-	-	23.193	-	-	1.553	-	-	2.575	-	-	3.463	-	-	-	-	-	3.463
3) Public Affairs System																				
3.1) Public Affairs PALMES ^(†)	A		-	-	-	190,000.00	4	0.760	200,000.00	2	0.400	200,000.00	1	0.200	-	-	-	200,000.00	1	0.200
3.2) Public Affairs System Equipment - Active	A		-	-	13.266	-	-	2.676	-	-	0.469	-	-	0.442	-	-	-	-	-	0.442
3.3) Public Affairs System Equipment - Reserves	A		-	-	0.164	-	-	0.046	-	-	0.048	-	-	0.049	-	-	-	-	-	0.049
Subtotal: 3) Public Affairs System			-	-	13.430	-	-	3.482	-	-	0.917	-	-	0.691	-	-	-	-	-	0.691
4) Marine Civil Information Management System (MARCIMS)																				
4.1) Marine Civil Information Management System (MARCIMS)	A		-	-	2.825	-	-	-	-	-	0.296	-	-	-	-	-	-	-	-	-
Subtotal: 4) Marine Civil Information Management System (MARCIMS)			-	-	2.825	-	-	-	-	-	0.296	-	-	-	-	-	-	-	-	-
5) Safety																				
5.1) Safety	A		-	-	0.099	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) Safety			-	-	0.099	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14									P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)							Aggregated Items Title: Items under \$5 million (Comm & Elec)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	
6) MAGTF Logistics Support Systems (MLS2) (RFID)																					
6.1) RFID Legacy Migration	A		-	-	0.197	-	-	0.127	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 6) MAGTF Logistics Support Systems (MLS2) (RFID)			-	-	0.197	-	-	0.127	-	-	-	-	-	-	-	-	-	-	-	-	
7) ENTERPRISE LOGISTICS SUPPORT SYSTEMS (ELS2)																					
7.1) RFID Legacy Migration	A		-	-	0.594	-	-	-	-	-	0.236	-	-	0.210	-	-	-	-	-	0.210	
Subtotal: 7) ENTERPRISE LOGISTICS SUPPORT SYSTEMS (ELS2)			-	-	0.594	-	-	-	-	-	0.236	-	-	0.210	-	-	-	-	-	0.210	
8) COMBAT OPTICS																					
8.1) Long Range Sniper Rifle Night Sight ^(†)	A		-	-	-	40,161.00	433	17.390	-	-	-	-	-	-	-	-	-	-	-	-	
8.2) Binocular Night Vision Goggles ^(†)	A		9,996.39	830	8.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8.3) Rifle Combat Optics Replenishment ^{(2)(†)}	A		1,229.95	187	0.230	-	-	-	1,250.00	21	0.026	1,300.00	231	0.300	-	-	-	1,300.00	231	0.300	
8.4) Sniper Range Finder ^(†)	A		6,656.39	227	1.511	6,441.18	714	4.599	-	-	-	-	-	-	-	-	-	-	-	-	
8.5) Squad Thermal System ^{(3)(†)}	A		-	-	-	9,238.51	389	3.594	9,502.72	1,386	13.171	17,905.00	1,948	34.879	-	-	-	17,905.00	1,948	34.879	
8.6) Production Support	A		-	-	0.940	-	-	2.484	-	-	2.505	-	-	0.405	-	-	-	-	-	0.405	
8.10) Squad BNVG ^{(4)(†)}	A		-	-	-	12,611.00	650	8.197	12,500.00	3,468	43.350	18,741.00	2,298	43.067	-	-	-	18,741.00	2,298	43.067	
8.11) Squad Common Optic	A		-	-	-	-	-	-	-	-	-	-	-	19.471	-	-	-	-	-	19.471	
Subtotal: 8) COMBAT OPTICS			-	-	10.978	-	-	36.264	-	-	59.052	-	-	98.122	-	-	-	-	-	98.122	
9) Manpower Operations Systems (MOS)																					
9.1) Servers	A		-	-	0.234	-	-	1.685	-	-	0.184	-	-	-	-	-	-	-	-	-	
9.2) Software	A		-	-	0.060	-	-	0.183	-	-	0.062	-	-	-	-	-	-	-	-	-	
Subtotal: 9) Manpower Operations Systems (MOS)			-	-	0.294	-	-	1.868	-	-	0.246	-	-	-	-	-	-	-	-	-	
10) Item Unique Identification (IUID)																					
10.1) Automation Information Technology (AIT) Hardware	A		-	-	2.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14									P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)							Aggregated Items Title: Items under \$5 million (Comm & Elec)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 10) Item Unique Identification (IUID)			-	-	2.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11) Test, Evaluation & Engineer Environment																					
11.1) Test Engineering Labs Infrastructure		A	-	-	-	-	-	-	-	-	0.748	-	-	0.903	-	-	-	-	-	0.903	
Subtotal: 11) Test, Evaluation & Engineer Environment			-	-	0.000	-	-	-	-	-	0.748	-	-	0.903	-	-	-	-	-	0.903	
12) Military Information Support Operations (MISO) Family of Systems																					
12.1) Fly-Away Broadcast System (FABS) (5)		A	-	-	-	-	-	-	-	-	-	-	-	3.994	-	-	-	-	-	3.994	
12.2) Signature Management (SIGMAN) Equipment (6)		A	-	-	-	-	-	-	-	-	1.000	-	-	3.800	-	-	-	-	-	3.800	
12.3) MISO Equipment (7)		A	-	-	-	-	-	-	-	-	1.976	-	-	0.570	-	-	-	-	-	0.570	
Subtotal: 12) Military Information Support Operations (MISO) Family of Systems			-	-	0.000	-	-	-	-	-	2.976	-	-	8.364	-	-	-	-	-	8.364	
13) Marine Corps Information Operations Program (MCIOP)																					
13.1) VARIOUS HARDWARE		A	-	-	-	-	-	-	-	-	0.382	-	-	0.371	-	-	-	-	-	0.371	
Subtotal: 13) Marine Corps Information Operations Program (MCIOP)			-	-	0.000	-	-	-	-	-	0.382	-	-	0.371	-	-	-	-	-	0.371	
Total			-	-	70.147	-	-	43.294	-	-	67.428	-	-	112.124	-	-	-	-	-	112.124	
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																					
(†) indicates the presence of a P-5a																					
Footnotes:																					
(1) CCS: Tactical Imagery Production System (TIPS) is a system of systems which enables extensively trained COMCAM documentation and production teams with increased capability to acquire, process, develop, reproduce, archive, distribute in hardcopy or multiple electronic formats digital still and motion media products as primary suppliers of operational imagery reinforcing distributive operations.																					
(2) The unit cost increase is based on the most recent pricing estimate from the source of supply for this equipment and the increase in quantity does not meet the next step ladder pricing increment.																					
(3) There are two variants of the STS under contract with the Army, and the unit cost is significantly different between the two. Unit cost for STS is based on cost estimate provided by Army's program office and projections of which variant will be procured in each year, as well as the step ladder pricing construct. Unit cost for each delivery will also vary as each procurement is bid separately and may or may not include Army quantities.																					
(4) The unit price increase is primarily due to the full and open contract introducing new flyaway costs that are not factored into the previously utilized DLA and Army contract pricing. The new contract will have Contractor Logistical Support (CLS), warranty, initial spares, program support, tech manual, and testing. All of these additional items are factored into the new unit cost projection.																					
(5) MISO: Fly-Away Broadcast System (FABS) increase of \$3.994M from FY19 to FY20 reflects FABS procurement which provides the MAGTF Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage.																					
(6) MISO: SIGMAN equipment \$2.800M increase from FY19 to FY20 provides for the continued procurement of SIGMAN components for signature monitoring and assessment, EM signature masking and projection, and physical decoys.																					

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14	P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)	Aggregated Items Title: Items under \$5 million (Comm & Elec)

(7) MISO: MISO Equipment decrease of \$1.406M from FY19 to FY20 reflects the completion of procurement for the Next-Generation Loud Speaker (NGLS) and supports the procurement of items such as Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MSIN), which provides the MAGTF Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14				P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)					Aggregated Items: Items under \$5 million (Comm & Elec)			
Item Number / Title [DODIC]	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
2) Combat Camera Systems												
2.2) Expeditionary Deployable Production System (EDPS)		2019	ECBC / APGEA, MD	C / TBD	** NO PCO **	Oct 2018	Jan 2019	123	3,066.00	Y		
2.2) Expeditionary Deployable Production System (EDPS)		2020	ECBC / APGEA, MD	C / TBD	** NO PCO **	Oct 2019	Jan 2020	123	3,066.00	Y		
2.3) Expeditionary Combat Photography System (ECPS)		2017	ECBC / APGEA, MD	MIPR	Aberdeen, MD	Dec 2016	Mar 2017	33	37,303.03	Y		
2.3) Expeditionary Combat Photography System (ECPS)		2018	ECBC / APGEA, MD	MIPR	Aberdeen, MD	Feb 2018	May 2018	9	37,303.03	Y		
2.4) Expeditionary Combat Video System (ECVS)		2017	ECBC / APGEA, MD	C / TBD	** NO PCO **	Oct 2016	Oct 2016	30	39,140.00	N		
2.4) Expeditionary Combat Video System (ECVS)		2018	ECBC / APGEA, MD	MIPR	Aberdeen, MD	Feb 2018	May 2018	13	39,140.00	Y		
3) Public Affairs System												
3.1) Public Affairs PALMES		2018	SSC-PAC / San Diego, CA	WR	San Diego, CA	Dec 2017	Mar 2018	3	200,000.00	Y		
3.1) Public Affairs PALMES	✓	2018	SSC-PAC / San Diego, CA	WR	San Diego, CA	Dec 2017	Mar 2018	1	160,000.00	Y		
3.1) Public Affairs PALMES		2019	SSC-PAC / San Diego, CA	WR	San Diego, CA	Oct 2018	Jan 2019	2	200,000.00	N		
3.1) Public Affairs PALMES		2020	SSC-PAC / San Diego, CA	C / TBD	** NO PCO **	Oct 2019	Oct 2019	1	200,000.00	N		
8) COMBAT OPTICS												
8.1) Long Range Sniper Rifle Night Sight		2018	DRS Network & Imaging Systems, LLC / Melbourne, FL	C / FFP	Melbourne, FL	Sep 2018	Sep 2019	433	40,161.00	N		
8.2) Binocular Night Vision Goggles		2017	DLA/L-3 / Londonderry, NH	MIPR	Philadelphia, PA	Sep 2017	Feb 2018	830	9,996.39	Y		
8.3) Rifle Combat Optics Replenishment ⁽²⁾		2017	Trijicon / Wixom, MI	C / FFP	Quantico, VA	Feb 2017	Jun 2017	187	1,229.95	Y		
8.3) Rifle Combat Optics Replenishment ⁽²⁾		2019	DLA/Trijicon / Wixom, MI	MIPR	Philadelphia, PA	Feb 2019	Jun 2019	21	1,250.00	Y		
8.3) Rifle Combat Optics Replenishment ⁽²⁾		2020	DLA/Trijicon / Wixom, MI	MIPR	Philadelphia, PA	Feb 2020	Jun 2020	231	1,300.00	Y		
8.4) Sniper Range Finder		2017	DLA/Optics 1 / Bedford, NH	MIPR	Philadelphia, PA	Jun 2017	Oct 2017	227	6,657.14	N		
8.4) Sniper Range Finder		2018	DLA/Optics 1 / Bedford, NH	MIPR	Philadelphia, PA	Feb 2018	Jun 2018	714	6,441.18	Y		
8.5) Squad Thermal System ^{(3)(t)}		2018	TBD ⁽⁸⁾ / TBD	C / TBD	** NO PCO **	Oct 2017	Oct 2017	389	9,238.51	N		
8.5) Squad Thermal System ^{(3)(t)}		2019	TBD ⁽⁸⁾ / TBD	MIPR	Fort Belvoir, VA	Mar 2019	Aug 2019	1,386	9,502.72	Y		
8.5) Squad Thermal System ^{(3)(t)}		2020	TBD ⁽⁸⁾ / TBD	C / TBD	** NO PCO **	Oct 2019	Mar 2020	1,948	17,905.00	Y		
8.10) Squad BNVG ^{(4)(t)}		2018	ADS, Inc. / Virginia Beach, VA	MIPR	Philadelphia, PA	Jul 2018	Oct 2018	650	12,611.00	Y		
8.10) Squad BNVG ^{(4)(t)}		2019	TBD ⁽⁹⁾ / TBD	TBD	TBD	Aug 2019	Jun 2020	3,468	12,500.00	N		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14				P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)				Aggregated Items: Items under \$5 million (Comm & Elec)				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
8.10) Squad BNVG ⁽⁴⁾ (†)		2020	TBD ⁽⁹⁾ / TBD	TBD	TBD	Aug 2020	Jun 2021	2,298	18,741.00	N		

(†) indicates the presence of a P-21

Footnotes:
⁽⁸⁾ Annual production rates for the Squad Thermal System are estimates of the manufacturing capacity for the entire inter-service contract, of which the Marine Corps is a small component.
⁽⁹⁾ SBNVG plans a full and open competition in FY19

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14										P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)													Aggregated Items: Items under \$5 million (Comm & Elec)								
Items <i>(Units in Each)</i>							Fiscal Year 2017												Fiscal Year 2018												BALANCE
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	
8) COMBAT OPTICS																															
8.5) Squad Thermal System ⁽³⁾																															
	12	2018	NAVY	389	0	389													A32	32	32	32	33	33	33	33	33	32	32	32	0
	12	2019	NAVY	1,386	0	1,386																									1,386
	12	2020	NAVY	1,948	0	1,948																									1,948
8.10) Squad BNVG ⁽⁴⁾																															
	13	2018	NAVY	650	0	650																					A -	-	-	650	
	14	2019	NAVY	3,468	0	3,468																									3,468
	14	2020	NAVY	2,298	0	2,298																									2,298
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14										P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)										Aggregated Items: Items under \$5 million (Comm & Elec)													
Items <i>(Units in Each)</i>							Fiscal Year 2019										Fiscal Year 2020													BALANCE			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019										Calendar Year 2020																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P		
8) COMBAT OPTICS																																	
8.5) Squad Thermal System ⁽³⁾																																	
	12	2018	NAVY	389	389	0																									0		
	12	2019	NAVY	1,386	0	1,386					A -	-	-	-	-	50	80	100	125	125	130	150	150	130	125	125	96			0			
	12	2020	NAVY	1,948	0	1,948											A -	-	-	-	-	150	160	170	170	170	170	170	170	788			
8.10) Squad BNVG ⁽⁴⁾																																	
	13	2018	NAVY	650	0	650	200	200	250																							0	
	14	2019	NAVY	3,468	0	3,468											A -	-	-	-	-	-	-	-	-	-	-	-	289	289	289	289	2,312
	14	2020	NAVY	2,298	0	2,298																									A -	-	2,298
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019										
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14										P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)													Aggregated Items: Items under \$5 million (Comm & Elec)										
Items <i>(Units in Each)</i>							Fiscal Year 2021											Fiscal Year 2022											BALANCE				
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021											Calendar Year 2022															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL		AUG	SEP		
8) COMBAT OPTICS																																	
8.5) Squad Thermal System ⁽³⁾																																	
	12	2018	NAVY		389	389	0																										0
	12	2019	NAVY		1,386	1,386	0																										0
	12	2020	NAVY		1,948	1,160	788	170	160	160	150	148																					0
8.10) Squad BNVG ⁽⁴⁾																																	
	13	2018	NAVY		650	650	0																										0
	14	2019	NAVY		3,468	1,156	2,312	289	289	289	289	289	289	289																			0
	14	2020	NAVY		2,298	0	2,298	-	-	-	-	-	-	-	289	289	289	289	289	289	289	275											0
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

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Exhibit P-21, Production Schedule: PB 2020 Navy			Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14		P-1 Line Item Number / Title: 4620 / Items under \$5 million (Comm & Elec)	Aggregated Items: Items under \$5 million (Comm & Elec)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TBD ⁽⁸⁾ - TBD	4,800	18,000	20,000	1	0	5	5	0	0	0	0
2	ADS, Inc. - Virginia Beach, VA	2,000	3,500	5,000	2	0	3	3	0	0	0	0
3	TBD ⁽⁹⁾ - TBD	2,000	3,500	50,000	2	9	3	12	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).

Footnotes:

⁽⁸⁾ Annual production rates for the Squad Thermal System are estimates of the manufacturing capacity for the entire inter-service contract, of which the Marine Corps is a small component.

⁽⁹⁾ SBNVG plans a full and open competition in FY19

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)							P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0206335M				
Line Item MDAP/MAIS Code: N36												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	316.081	14.107	14.269	17.408	0.000	17.408	15.614	7.513	1.354	1.508	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	316.081	14.107	14.269	17.408	0.000	17.408	15.614	7.513	1.354	1.508	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	316.081	14.107	14.269	17.408	0.000	17.408	15.614	7.513	1.354	1.508	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Joint Cooperative Target Identification-Ground (JCTI-G): The JCTI-G program will address four of the 26 capability gaps identified in the validated Combat ID - Friendly Force Tracker (CID-FFT) Joint Capabilities Document (JCD). A Jun 2010 JFCOM-led Analysis of Alternatives (AoA) concluded, and the USMC concurred, that pursuit of a new material solution and introduction of a new system would not be cost effective. This conclusion was based upon both cost and ability to address the four defined capability gaps in Combat Identification specific to reducing fratricide of U.S. and coalition forces. The AoA evaluated the currently Fielded and Planned Capability Improvements (FPCI) resident within funded projects and existing programs of records across all Services and determined that the most affordable alternative would leverage the FPCI programs by allocating the CID-FFT requirements and funding capability improvements within these existing programs. The AoA further concluded that, in addition to significant cost avoidance, leveraging the FPCI to meet the CID-FFT requirements, as opposed to establishing a new program of record material solution, would have greater impact and achieve a higher percentage of CID-FFT JCD capability gap closure by 2016. In support of a Jan 2010 Memorandum of Understanding between the Vice Chief of Staff of the Army and Assistant Commandant of the Marine Corps (which documents the Army and Marine Corps agreement to support closure of the Fires on Dismounts fratricide mitigation gap), the USMC refocused the program in June 2011 to begin allocation of CID-FFT JCD requirements to the USMC FPCI programs to meet this valid Joint Capabilities Integration and Development System (JCIDS) requirement. Having no previous CID-FFT requirement, these FPCI programs have neither planned for nor been resourced to support the additional requirements of the CID-FFT JCD. As a result of these events, this effort will ensure requirements allocation, traceability, and validation within 24 USMC FPCI programs in accordance with the CID-FFT JCD and JCIDS processes and provide resource funding as well as augment the workforce to support the additional unanticipated requirements being levied on FPCI programs. Additionally, it will support aggregation of a time-phased schedule of USMC CID-FFT capabilities and future interoperability engineering/testing between FPCI systems and related modernization efforts necessary to minimize costs and measure attainment of CID-FFT JCD capability gap closure by 2016. The AoA recommendation, accepted by the Services and OSD, is to maintain and enhance the full range of FPCI programs to meet the requirements and mitigate CID-FFT capability gaps identified in the CID-FFT JCD. The intent is to reduce fratricide, uphold the DOD and USMC position on JCTI-G, remain consistent with the AoA recommendations, comply with the purpose of JCTI-G appropriations, and support capability gap closure in accordance with the AoA and OSD led OIPT findings. Composite Tracking Network (CTN) - The Composite Tracking Network (CTN) system distributes composite tracking data to Command and Control (C2) and weapon systems participating in a Cooperative Engagement Capability (CEC) network. The system will significantly contribute to real-time situational awareness. The program received ACAT III designation in Nov 2001. The program is USMC led with US Navy and US Army cooperation. AAO: 10 systems plus four (4) spares. The 12 April 1995 Mission Need Statement (MNS) No. AAS 48 for the Common Aviation Command and Control System (CAC2S) established the Marine Corps' need to upgrade its existing air defense architecture with capabilities to support improved situational awareness (SA) and advanced engagement concepts. The Composite Tracking Network (CTN) program was initiated to address this capability gap. The CTN system (AN/MSQ-143) is an integration effort consisting of an AN/USG-4A and other Marine-unique components. All Marine-unique components are Government Furnished Equipment (GFE) with the exception of the shelter and mast. The components include: Vehicle - M1152A-1 (GFE Marine Corps Systems Command (MCSC), Trailer - M102 LTT-MCC (GFE MCSC), 10 KW Generator - MEP 803 (GFE MCSC), Tactical Radio - AN/MRC103 (GFE MCSC), Global Positioning System - DAGR (GFE MCSC), Environmental Control Unit - BOO03 (GFE MCSC), Shelter - S788 (COTS NSWC Crane), and Antenna Mast - TEAMS EXL 195/26-5.4 (COTS Naval Surface Warfare Center Crane). The CTN system interfaces with the AN/												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)		P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0206335M
Line Item MDAP/MAIS Code: N36 TPS-59 radar, the AN/TPS-80 Ground/Air Task Oriented Radar (G/ATOR), and the CAC2S to provide the Marine Air-Ground Task Force (MAGTF) and Joint Task Force Commanders a ground based sensor netting solution that correlates sensor measurement data (target velocity and position) from local and remote radars that interface in the CEC network. This data will effectively increase Situational Awareness by providing accurate, composite, and real-time surveillance tracks, reduce ground-to-air and air-to-air fratricide, enable air and surface Integrated fire control (IFC), and extend the air defensive capability of forces in the littorals. Procurement of Common Array Block - Expeditionary (CAB-E) to replace obsolete Compact Solid State Antenna (CSSA) to begin FY 2019. Marine Air Command and Control (MACCS) - MACCS Family of Systems (FoS) is organized into tactical agencies and operational facilities, each having different functions, tasks, and equipment suites. These agencies are fielded and supported by squadrons within the Marine Air Control Group (MACG) in support of the Aviation Combat Element (ACE). The tactical agencies are: the Tactical Air Command Center (TACC), the Tactical Air Operations Center (TAOC), and the Direct Air Support Center (DASC). The core MACCS systems consist of: The AN/TYQ-23 Tactical Air Operations Module (TAOM); AN/TYQ-101 Communications Data Link System (CDLS); AN/MRQ-12(V)4 Communications Interface System (CIS); AN/TYQ-87(V)2 Sector Anti Air Warfare Facility; AN/UYQ-3B Direct Air Support Central/Airborne System (DASC/AS); and the AN/MSQ-124 Air Defense Communications Platform (ADCP). The MACCS FoS program office ensures that the TACC, TAOC, and DASC systems remain ready, relevant, and capable until Full Operational Capability (FOC) of Common Aviation Command and Control System (CAC2S). Remote Video Viewing Terminal (RVVT) - Consists of Video Down-Link (VDL) products such as the VideoScout Mobile Configuration 2 (VS-MC/2), VideoScout Mobile Configuration 3 (VS-MC/3), and Man Portable Video Down-Link (MPVDL) that allow for the viewing and exploitation of Full Motion Video (FMV) from Intelligence, Surveillance, and Reconnaissance (ISR) assets. VDL systems are mission critical for the coordination of direct and indirect fires and the prevention of fratricide. These systems provide the warfighter with video and metadata from all USMC manned and unmanned aircraft such as the Raven B, Puma, Micro-UAS, Shadow, Predator, Fire Scout, and Litening Pod on P-3, AV8-B, and F/A-18. Data is displayed to Forward Observers (FO), Joint Fires Observers (JFO), Joint Terminal Attack Coordinators (JTAC), and Forward Air Controller (FAC). Theater Battle Management Core System (TBMCS) - Joint Force mandated Air War planning tool for the generation, dissemination, and execution of the Air Tasking Order (ATO). TBMCS is an Air Force led program, which provides the automated tools necessary to manage tactical air operations, execute area air defense and airspace management in the tactical area of operation, and coordinate operations with components of other military services. TBMCS is located at the Tactical Air Command Center (TACC), with remotes located throughout the Marine Air Ground Task Force (MAGTF). It is scalable, allowing for joint, coalition, and service specific operations. It is an evolutionary acquisition program.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)						P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0206335M				
Line Item MDAP/MAIS Code: N36										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Air Operations C2 Systems	P-5a, P-21			- / 316.081	- / 14.107	- / 14.269	- / 17.408	- / -	- / 17.408
P-40	Total Gross/Weapon System Cost				- / 316.081	- / 14.107	- / 14.269	- / 17.408	- / 0.000	- / 17.408
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Base Appropriation (\$14.107M): Composite Tracking Network (CTN) \$1.074M - Funding procured hardware and software upgrades to support the sustainment of Compact Solid State Antenna (CSSA). This is an update to PB19. The continued sustainment is due to the delay to FY 2019 of the procurement of quantity five (5) Common Array Block - Expeditionary (CAB-E) antennas. This delay is due to continued negotiations during source selection. Funds also support completion of AN/USG-4B retrofit and fielding. Marine Air Command and Control (MACCS) \$2.662M - Funds provided for the procurement of twenty five (25) Multifunctional Information Distribution System (MIDS) Block II Upgrades in accordance with DoD mandate and to ensure participation in any radio frequency Link-16 network. Theater Battle Management Core System (TBMCS) \$1.902M - Funding continued efforts such as on-site fielding representatives to support updated software and hardware fielding and the incremental procurement of new hardware for TBMCS to maintain cyber security accreditation as well as associated NET. Remote Video Viewing Terminal (RVVT) \$8.469M- Funds procured hardware and ancillary equipment for the integration of the Full Motion Video capability into a user supported viewing platform. FY 2019 Base Appropriation (\$14.269M): Composite Tracking Network (CTN) \$5.455M - Funds support the procurement of three (3) Common Array Block - Expeditionary (CAB-E) antennas to replace the obsolete Compact Solid State Antenna (CSSA) as well as associated New Equipment Training (NET) prior to fielding. Marine Air Command and Control (MACCS) \$0.050M - Funds support the physical transition of Multifunctional Information Distribution System (MIDS) systems to be integrated into the Common Aviation Command and Control System (CAC2S) Full Deployment Units (FDU). MIDS are Link 16 Low Volume Terminals (LVT) which are required to support command, control, communications, computing and intelligence (C4I) as a part of CAC2S Full Deployment Units (0206335M). Theater Battle Management Core System (TBMCS) \$1.477M - Funding continues efforts such as on-site fielding representatives to support updated software and hardware fielding and the incremental procurement of new hardware for TBMCS to maintain cyber security accreditation as well as associated NET in support of Maintenance Release Version 7 (MR7V). Remote Video Viewing Terminal (RVVT) \$7.287M - Funds will procure hardware and ancillary equipment for the integration of the Full Motion Video capability into a user supported viewing platform. FY 2020 Base Appropriation (\$17.408M):										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 14: Command and Control System (Non-Tel)		P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0206335M
Line Item MDAP/MAIS Code: N36		
Composite Tracking Network (CTN) \$10.070M - Funds will support the procurement of five (5) Common Array Block - Expeditionary (CAB-E) antennas and associated Initial Issue Provisioning (IIP), NET, and fielding. The CAB-E will replace the aging Compact Solid State Antenna (CSSA). The increase of \$4.615M from FY 2019 to FY 2020 due to additional quantity of (2) CAB-E antennas, increased support related to the CAB-E Antenna fielding, and CAB-E IIP to be procured in FY 2020. Marine Air Command and Control (MACCS) \$0.000M - Funding has been decreased from \$0.050 to \$0.000 due to the program sun setting and no longer being funded. Theater Battle Management Core System (TBMCS) \$1.464M - Funding will continue efforts such as on-site fielding representatives to support updated software and hardware fielding and the incremental procurement of new hardware for TBMCS to maintain cyber security accreditation as well as associated NET in support of Maintenance Release Version 8 (MR8V). Remote Video Viewing Terminal (RVVT) - \$5.874M - Funds will be used to procure hardware to conduct a refresh of the battery and power management components of the Full Motion Video capability. Decrease of \$1.413M from FY 2019 to FY 2020 is due to a decreased requirement of cabling to support batteries.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14								P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems							Aggregated Items Title: Air Operations C2 Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Remote Video Viewing Terminal (RVVT)																				
1.1) PRIOR YEARS CUMULATIVE FUNDING (RVVT)	A		-	-	13.389	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) FMV Components	A		-	-	10.248	-	-	8.469	-	-	7.287	-	-	1.205	-	-	-	-	-	1.205
1.3) Hardware Refresh	A		-	-	-	-	-	-	-	-	-	-	-	4.669	-	-	-	-	-	4.669
Subtotal: 1) Remote Video Viewing Terminal (RVVT)			-	-	23.637	-	-	8.469	-	-	7.287	-	-	5.874	-	-	-	-	-	5.874
2) CTN																				
2.1) CTN CAB-E Antenna Procurement ^(†)	A		-	-	-	-	-	-	1,527K	3	4.580	1,527K	5	7.634	-	-	-	1,527K	5	7.634
2.2) CAB-E Initial Issue Provisioning (IIP)	A		-	-	-	-	-	-	-	-	-	-	-	0.508	-	-	-	-	-	0.508
2.3) Engineering change Proposals (ECPs) ⁽¹⁾			-	-	21.652	-	-	0.641	-	-	0.737	-	-	1.502	-	-	-	-	-	1.502
2.4) Fielding and NET training ⁽²⁾	A		-	-	1.794	-	-	0.146	-	-	0.138	-	-	0.426	-	-	-	-	-	0.426
2.5) Compact Solid State Antenna (CSSA) Spares	A		-	-	-	-	-	0.287	-	-	-	-	-	-	-	-	-	-	-	-
2.6) PRIOR YEARS CUMULATIVE FUNDING (CTN)			-	-	32.665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) CTN			-	-	56.111	-	-	1.074	-	-	5.455	-	-	10.070	-	-	-	-	-	10.070
3) Common Aviation Command and Control System (CAC2S)																				
3.1) PRIOR YEARS CUMULATIVE FUNDING (CAC2S) ⁽³⁾			-	-	63.214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Common Aviation Command and Control System (CAC2S)			-	-	63.214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) TBMCS																				
4.1) TBMCS HW Procurement/ Integration Support	A		-	-	26.720	-	-	0.093	-	-	0.102	-	-	0.117	-	-	-	-	-	0.117
4.2) New Equipment Training			-	-	27.404	-	-	0.937	-	-	0.760	-	-	0.725	-	-	-	-	-	0.725
4.3) OnSite Fielding Reps			-	-	7.568	-	-	0.872	-	-	0.615	-	-	0.622	-	-	-	-	-	0.622

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14						P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems									Aggregated Items Title: Air Operations C2 Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.4) PRIOR YEARS CUMULATIVE FUNDING (TBMCS)			-	-	10.107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) TBMCS			-	-	71.799	-	-	1.902	-	-	1.477	-	-	1.464	-	-	-	-	-	1.464
5) Marine Air Command and Control System (MACCS) Service																				
5.1) ADCP/DASCAS/ MIDS	A		-	-	4.660	-	-	2.662	-	-	-	-	-	-	-	-	-	-	-	-
5.2) Program Travel - MIDS Block II Fielding	A		-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	-	-	-	-
5.3) PRIOR YEARS CUMULATIVE FUNDING (MACCS)			-	-	96.660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) Marine Air Command and Control System (MACCS) Service			-	-	101.320	-	-	2.662	-	-	0.050	-	-	-	-	-	-	-	-	-
Total			-	-	316.081	-	-	14.107	-	-	14.269	-	-	17.408	-	-	-	-	-	17.408

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

(†) indicates the presence of a P-5a

Footnotes:

(1) \$0.765M increase from FY 2019 to FY 2020 is due to ECPs associated with the integration of the Common Array Block - Expeditionary (CAB-E) antenna into CTN.

(2) \$0.288M Increase in fielding and New equipment Training (NET) cost from FY 2019 to FY 2020 is due to implementation of CAB-E and removal of CSSA.

(3) Funds support the physical transition of Multifunctional Information Distribution System (MIDS) systems to be integrated into the Common Aviation Command and Control System (CAC2S) Full Deployment Units (FDU). MIDS are Link 16 Low Volume Terminals (LVT) which are required to support command, control, communications, computing and intelligence (C4I) as a part of CAC2S Full Deployment Units (0206335M).

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14				P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems					Aggregated Items: Air Operations C2 Systems			
Item Number / Title [DODIC]	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
2) CTN												
2.1) CTN CAB-E Antenna Procurement ^(†)		2019 ⁽⁴⁾	Raytheon / St. Petersburg, FL	C / FFP	St. Petersburg, FL	Apr 2019	Apr 2020	3	1,527K	Y		Jan 2018
2.1) CTN CAB-E Antenna Procurement ^(†)		2020 ⁽⁵⁾	Raytheon / St. Petersburg, FL	C / FFP	St. Petersburg, FL	Apr 2020	Apr 2021	5	1,527K	Y		Jan 2018
^(†) indicates the presence of a P-21 Footnotes: ⁽⁴⁾ Quantity 3 CAB-E Antennas will be procured utilizing NAVSEA Raytheon contract and will be executed 26 April 2019. ⁽⁵⁾ Quantity 5 CAB-E Antennas will be procured utilizing NAVSEA Raytheon contract and will be executed 26 April 2020.												

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																							
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14										P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems										Aggregated Items: Air Operations C2 Systems																							
Items (Units in Each)							Fiscal Year 2019													Fiscal Year 2020													BALANCE										
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020																							
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP													
2) CTN																																											
2.1) CTN CAB-E Antenna Procurement																																											
	15	2019	NAVY	3	0	3														A	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1				0			
	15	2020	NAVY	5	0	5																											A	-	-	-	-	-	-				5
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP													

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14										P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems										Aggregated Items: Air Operations C2 Systems												
Items (Units in Each)							Fiscal Year 2021										Fiscal Year 2022														BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
2) CTN																																
2.1) CTN CAB-E Antenna Procurement																																
	15	2019	NAVY	3	3	0																										0
	15	2020	NAVY	5	0	5	-	-	-	-	-	-	1	1	1	1	1															0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 14					P-1 Line Item Number / Title: 4640 / Air Operations C2 Systems				Aggregated Items: Air Operations C2 Systems			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Raytheon - St. Petersburg, FL	5	5	8	0	0	12	12	0	0	12	12
"A" in the Delivery Schedule indicates the Contract Award Date. Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 15: Radar + Equipment (Non-Tel)							P-1 Line Item Number / Title: 4650 / Radar Systems					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0204460M				Other Related Program Elements: 0204460M, 0206313M				
Line Item MDAP/MAIS Code: 386												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	607.121	14.811	6.694	0.329	0.000	0.329	5.315	6.469	8.142	0.000	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	607.121	14.811	6.694	0.329	0.000	0.329	5.315	6.469	8.142	0.000	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	607.121	14.811	6.694	0.329	0.000	0.329	5.315	6.469	8.142	0.000	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Long Range Radar (AN/TPS-59) - The AN/TPS-59A(V)3 is a transportable, three dimensional, tactical radar system that provides the Marine Air Ground Task Force (MAGTF) with long-range surveillance. It is the MAGTF's only ground based long range sensor that provides the capability to detect and report Air Breathing Targets (ABT) and track Theater Ballistic Missiles (TBM). The AN/TPS-59A(V)3 Radar System is connected to the Common Aviation Command and Control Systems (CAC2S). It provides the air defense controllers data and may be used autonomously to conduct Ground Control Intercept, tactical en-route Air Traffic Control (ATC), or TBM alert operations via the Joint Integrated Air Missile Defense (IAMD) encrypted Link-16. The USMC extended the AN/TPS-59 service life through 2035; therefore, in order to maintain its operational relevance on the battlefield, a number of readiness, obsolescence and modernization efforts will be required. Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify, and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder Radar, the AN/TPQ-49 Lightweight Counter Mortar Radar, and the AN/TSQ-267 Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. The program will continue to address system issues that arise due to Diminishing Manufacturing Sources and Material Shortages (DMSMS) items within the FTAS. The USMC assumed the role of Primary Inventory Control Activity (PICA) for the AN/TPQ-49 in FY15 when the Army divested itself from the system.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	11.217	2.312	0.329	-	0.329	5.315	6.469	8.142	-		
NR	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	3.594	4.382	-	-	-	-	-	-	-	-	
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	14.811	6.694	0.329	-	0.329	5.315	6.469	8.142	-		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 15: Radar + Equipment (Non-Tel)						P-1 Line Item Number / Title: 4650 / Radar Systems				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0204460M			Other Related Program Elements: 0204460M, 0206313M			
Line Item MDAP/MAIS Code: 386										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Radar Systems				- / 607.121	- / 14.811	- / 6.694	- / 0.329	- / -	- / 0.329
P-40	Total Gross/Weapon System Cost				- / 607.121	- / 14.811	- / 6.694	- / 0.329	- / 0.000	- / 0.329
*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: Beginning in FY19, FTAS funding is realigned from BLI 4650, RADAR SYSTEMS to BLI 4733, FIRE SUPPORT SYSTEMS. FY2018 Base Appropriation Request: \$14.811M AN/TPS-59: \$9.676M - (Active: \$6.367M, Reserve: \$3.309M) FY18 funding supported procurement of the initial Identification Friend or Foe (IFF) Antenna in order to address obsolescence in the current antenna. Funding also procured two Digital Receiver and Exciter (DREX) Cabinets in support of the TPS-59 Radar System receiver and exciter technical refresh. In addition, funds supported DREX Production and Deployment materials such as training package and technical data package to support provisioning and fielding; and ECPs such as, Mode 5 training package, and Array Drive Gearbox modifications. FTAS: \$5.135M - (Active: \$4.850, Reserve: \$0.285M) FY18 funding procured ECP Modification Kits and continued to address DMSMS issues within the FTAS. FY2019 Base Appropriation Request: \$6.694M AN/TPS-59: \$6.694M (Active: \$2.312M, Reserve: \$4.382M) FY19 funding completes procurement of IFF Antenna; supports procurement of DREX logistics and training products such as EDM technical manuals and product data, and ECPs such as Array Drive assembly and installation. The decrease of \$2.982M from FY18 to FY19 and changes in acquisition strategies from PB19 to PB20 reflects alignment to USMC decision to defer all modernization except the Identify Friend or Foe (IFF) Mode 5/S level 1 upgrade and upgrades specifically to prevent system obsolescence beginning in FY20. FTAS: \$0.000M - (Active: \$0.000M, Reserve: \$0.000M) FY19 decrease is due to a realignment from Budget Line Item (BLI) 4650 to BLI 4733. Realignment of effort to new BLI in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. FY2020 Base Appropriation Request: \$0.329M AN/TPS-59: \$0.329M (Active: \$0.329M) Decrease of \$6.365M from FY19 to FY20 reflects USMC decision to defer all modernization except the Identify Friend or Foe (IFF) Mode 5/S level 1 upgrade and upgrades specifically to prevent system obsolescence. \$0.329M will support procurement and integration of ECP upgrades with multiple components and various unit costs to mitigate obsolescence and end-of-life/end-of-sale issues.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15								P-1 Line Item Number / Title: 4650 / Radar Systems							Aggregated Items Title: Radar Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
1) AN/TPS-59																				
1.1) AN/TPS-59 DREX Production and Deployment	A		-	-	-	-	-	3.199	-	-	-	-	-	-	-	-	-	-	-	-
1.2) AN/TPS-59 DREX Logistics and Training Data	A		-	-	-	-	-	-	-	-	1.403	-	-	-	-	-	-	-	-	-
1.3) AN/TPS-59 IFF Antenna	A		-	-	1.000	-	-	0.397	-	-	-	-	-	-	-	-	-	-	-	-
1.4) AN/TPS-59 IFF Antenna (Reserves)	A		-	-	0.200	-	-	-	-	-	4.382	-	-	-	-	-	-	-	-	-
1.5) AN/TPS-59 ECP Upgrades ⁽¹⁾			-	-	6.887	-	-	2.771	-	-	0.909	-	-	0.329	-	-	-	-	-	0.329
1.6) AN/TPS-59 ECP Upgrades (Reserve) ⁽²⁾	A		-	-	1.402	-	-	3.309	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) AN/TPS-59			-	-	9.489	-	-	9.676	-	-	6.694	-	-	0.329	-	-	-	-	-	0.329
2) FTAS																				
2.1) FTAS Upgrades and Installation	A		-	-	14.264	-	-	4.850	-	-	-	-	-	-	-	-	-	-	-	-
2.2) FTAS Upgrades and Installation (Reserve)	A		-	-	1.107	-	-	0.285	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) FTAS			-	-	15.371	-	-	5.135	-	-	-	-	-	-	-	-	-	-	-	-
3) Prior Years Cumulative Funding																				
3.1) Prior Years Cumulative Funding	A		-	-	582.261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Prior Years Cumulative Funding			-	-	582.261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	607.121	-	-	14.811	-	-	6.694	-	-	0.329	-	-	-	-	-	0.329

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

Footnotes:

⁽¹⁾ AN/TPS-59 ECP upgrades are comprised of multiple components with various unit costs to mitigate obsolescence and end-of life/end-of-sale issues.

⁽²⁾ AN/TPS-59: ECP upgrades are comprised of multiple components at various unit costs to mitigate obsolescence and end-of-life/end-of-sale issues.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 15: Radar + Equipment (Non-Tel)							P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0204460M, 0506313M				Other Related Program Elements: 0206313M				
Line Item MDAP/MAIS Code: 386												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	8	3	6	8	-	8	8	8	-	-	-	41
Gross/Weapon System Cost (<i>\$ in Millions</i>)	336.498	134.726	220.416	273.022	0.000	273.022	284.592	298.024	19.307	19.693	58.634	1,644.912
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	336.498	134.726	220.416	273.022	0.000	273.022	284.592	298.024	19.307	19.693	58.634	1,644.912
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	336.498	134.726	220.416	273.022	0.000	273.022	284.592	298.024	19.307	19.693	58.634	1,644.912
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	11.417	11.611	13.235	-	13.235	13.506	13.806	14.101	14.383	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Millions</i>)	39.768	38.380	32.562	32.106	-	32.106	33.321	34.947	-	-	-	37.016
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	42.062	44.909	36.736	34.128	-	34.128	35.574	37.253	-	-	-	40.120
Description: Ground/Air Task Oriented Radar (G/ATOR AN/TPS-80) - The Ground/Air Task Oriented Radar is a multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System (G/ATOR Block 1) and the Ground Counter Fire/Counter Battery (G/ATOR Block 2) capabilities. The G/ATOR replaces the AN/TPS-63 and complements the AN/TPS-59 long range radar and will provide mobile, multi-functional, three-dimensional surveillance of air breathing targets, detection of cruise missiles and Unmanned Aerial Systems (UAS), and the cueing of air defense weapons. The G/ATOR contributes to the extension of Sea Shield/Sea Strike through surveillance and detection of enemy air threats not seen by Navy sensors in the littorals by participating in a cooperative engagement network of sensors and shooters; G/ATOR enables Integrated Fire Control (IFC) and provides engage/fire on remote capability. G/ATOR surveillance coverage with IFC will provide unprecedented reach, volume, and precision in the execution of Operational Maneuver From The Sea allowing Naval forces to project and sustain power deep inland. Prior year funding and quantities for the G/ATOR program can be found in BLI 4650 - Radar Systems.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	3	2	4	-	4	8	8	-	-	-	
	Total Obligation Authority	134.726	101.059	151.175	-	151.175	284.592	298.024	19.307	19.693		
NR	Quantity	-	4	4	-	4	-	-	-	-	-	
	Total Obligation Authority	-	119.357	121.847	-	121.847	-	-	-	-	-	
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	134.726	220.416	273.022	-	273.022	284.592	298.024	19.307	19.693		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 15: Radar + Equipment (Non-Tel)						P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: 0204460M, 0506313M			Other Related Program Elements: 0206313M				
Line Item MDAP/MAIS Code: 386										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Ground/Air Task Oriented Radar (G/ATOR)	P-5a, P-21			8 / 336.498	3 / 134.726	6 / 220.416	8 / 273.022	- / 0.000	8 / 273.022
P-40	Total Gross/Weapon System Cost				8 / 336.498	3 / 134.726	6 / 220.416	8 / 273.022	- / 0.000	8 / 273.022
*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.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

FY2018 Base Appropriation Request:
AN/TPS-80 G/ATOR \$134.726M - FY18 funding procured three (3) Gallium Nitride (GaN) LRIP G/ATOR systems and provided funding for support associated with the procurement of systems, hardware, program management and logistics required for G/ATOR fielding related activities as the ICLS contract awarded Oct 17 supported eight (8) fielded systems in FY18.

FY2019 Base Appropriation Request \$220.416M (\$101.059M Active; \$119.357M Reserves)
AN/TPS-80 G/ATOR \$220.416M - FY19 funding procures six (6) G/ATOR systems and provides logistic/program support associated with the procurement of systems, hardware, program management and logistics required for G/ATOR fielding related activities. The increase in funding from FY18 to FY19 primarily reflects the increase in G/ATORs from three (3) to six (6) systems (\$95.690M) as part of the first year of full Rate Production, increases in logistics (\$4.110M) to support fielding of four (4) additional systems for a total of twelve (12) fielded systems through FY19 and a slight increase for Communications Equipment Group (CEG) Shelters (\$1.077M) necessary to support the initial Full Rate Production Lot procurement quantity of six (6) systems.

FY2020 Base Appropriation Request \$273.022M (\$151.175M Active; \$121.847M Reserves)
AN/TPS-80 G/ATOR \$273.022M - FY20 funding will procure eight (8) G/ATOR systems and provide logistic/program support associated with the procurement of systems, hardware, program management and logistics required for G/ATOR fielding related activities. The increase in funding from FY19 to FY20 primarily reflects the increase in G/ATORs from six (6) to eight (8) systems (\$59.646M) as part of the second year of full Rate Production, as well as, other minor increases to include implementing Engineering Change Orders (ECOs) (\$0.849M), focusing on Radar Emplacement/Displacement improvements, and Communications Equipment Group (CEG) Shelters (\$0.606M) necessary to support the second Full Rate Production Lot procurement quantity of eight (8) systems.

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15						P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)						Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				8		3		6		8		-		8				
Gross/Weapon System Cost (\$ in Millions)				336.498		134.726		220.416		273.022		0.000		273.022				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				336.498		134.726		220.416		273.022		0.000		273.022				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				336.498		134.726		220.416		273.022		0.000		273.022				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		11.417		11.611		13.235		-		13.235				
Gross/Weapon System Unit Cost (\$ in Millions)				42.062		44.909		36.736		34.128		-		34.128				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Flyaway - G/ATOR - Active (PE 0204460M) & Reserve (PE 0506313M) Cost																		
Recurring Cost																		
1.1.1) G/ATOR System (Active) ^(†)	32.728	8	261.825	31.837	3	95.511	29.839	2	59.678	29.835	4	119.340	-	-	-	29.835	4	119.340
1.1.2) Systems Engineering/Program Management (SEPM) (Active) ⁽¹⁾	-	-	40.037	-	-	14.768	-	-	10.044	-	-	11.002	-	-	-	-	-	11.002
1.1.3) G/ATOR System (Reserve) ^(†)	-	-	-	-	-	-	29.839	4	119.356	29.835	4	119.340	-	-	-	29.835	4	119.340
Subtotal: Recurring Cost	-	-	301.862	-	-	110.279	-	-	189.078	-	-	249.682	-	-	-	-	-	249.682
Non Recurring Cost																		
1.2.1) Engineering Change Orders (ECO) (Active) ⁽²⁾	-	-	16.281	-	-	4.378	-	-	5.588	-	-	3.930	-	-	-	-	-	3.930
1.2.2) Engineering Change Orders (ECO) (Reserve)	-	-	-	-	-	-	-	-	-	-	-	2.507	-	-	-	-	-	2.507
1.2.4) Depot Tooling/ Facilitization (Active) ⁽³⁾	-	-	-	-	-	0.482	-	-	0.705	-	-	0.725	-	-	-	-	-	0.725
Subtotal: Non Recurring Cost	-	-	16.281	-	-	4.860	-	-	6.293	-	-	7.162	-	-	-	-	-	7.162

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Exhibit P-5, Cost Analysis: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15					P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)					Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)			

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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Flyaway - G/ATOR - Active (PE 0204460M) & Reserve (PE 0506313M) Cost</i>	-	-	318.143	-	-	115.139	-	-	195.371	-	-	256.844	-	-	-	-	-	256.844
Hardware - G/ATOR - Active (PE 0204460M) Cost																		
Recurring Cost																		
2.1.1) G/ATOR Shelters ⁽⁴⁾	-	-	7.052	-	-	4.518	-	-	5.595	-	-	6.201	-	-	-	-	-	6.201
<i>Subtotal: Recurring Cost</i>	-	-	7.052	-	-	4.518	-	-	5.595	-	-	6.201	-	-	-	-	-	6.201
<i>Subtotal: Hardware - G/ATOR - Active (PE 0204460M) Cost</i>	-	-	7.052	-	-	4.518	-	-	5.595	-	-	6.201	-	-	-	-	-	6.201
Support - G/ATOR - Support Active (PE 0204460M) Cost																		
3.1) Program Management Support ⁽⁵⁾	-	-	5.453	-	-	5.229	-	-	5.500	-	-	5.551	-	-	-	-	-	5.551
3.2) Logistics Support (Shelters)	-	-	1.467	-	-	0.496	-	-	0.508	-	-	0.534	-	-	-	-	-	0.534
3.3) Logistics Support (CLS/ICLS) ⁽⁶⁾	-	-	4.383	-	-	9.344	-	-	13.442	-	-	3.892	-	-	-	-	-	3.892
<i>Subtotal: Support - G/ATOR - Support Active (PE 0204460M) Cost</i>	-	-	11.303	-	-	15.069	-	-	19.450	-	-	9.977	-	-	-	-	-	9.977
Gross/Weapon System Cost	42.062	8	336.498	44.909	3	134.726	36.736	6	220.416	34.128	8	273.022	-	-	0.000	34.128	8	273.022

(t) indicates the presence of a P-5a

Footnotes:

- (1) Systems Engineering Program Management (SEPM) is a negotiated cost within the Full Rate Production (FRP) Contract that funds the Prime Contractor's management of the G/ATOR Radar system engineering and production efforts. Funding request is based on the SEPM Cost Estimate validated at Milestone "C".
- (2) ECO funding addresses emergent corrective actions from DT1C/OA, DT1D/OA and DT1E/IOT&E testing, as well as diminishing manufacturing sources/material shortages and user community feedback to improve Human Systems Integration (HSI). ECO funding also reduces the number of material/electronic obsolescence issues and ultimately improve future Marine Forces readiness. FY18/19 ECOs include the Precision Timing Unit, Radome and Antenna Support Electronics Covers and Pallet Communications Support Processors (PCSPs). FY20 ECOs include PCSP and GB2 Hardware improvements with a focus on reducing Radar Emplacement/Displacement time.
- (3) Funding supports facilitization (tooling) for the Near Field Range, Line Replaceable Unit (LRU) Repair and Inspect and Repair Only As Necessary (IROAN) activities at Tobyhanna Army Depot. LRU Repair facilitization continues in FY20.

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15	P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)	Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(4) This requirement is derived from Change 4 of G/ATOR Block 2 Capabilities Development Document. The increase of \$0.606M from FY19 to FY20 procures Communications Equipment Group (CEG) Shelters and their associated components to support the G/ATOR FRP Lot 2 procurement quantity of eight (8). The CEG Shelter is comprised of an S-788 Shelter on an up-armored HMMWV, providing the G/ATOR system with operator interfaces and communications processing. The CEG Shelter is an integral component of the G/ATOR System and supports external Command and Control voice and digital communications to CAC2S, CTN, and AFATDS. (5) With G/ATOR being post Milestone C and in the second year of Full Rate Production, program management support completely migrated from RDT&E to PMC funding in FY19. (6) G/ATOR's product support strategy employs a combination of Contractor Logistics Support (CLS) and Interim Contactor Logistics Support (ICLS) until a hybrid Performance Based Logistics/Organic Maintenance is established during the Full Rate Production phase beginning in FY20 and supporting all G/ATOR's. Contractor Logistics Support (CLS) is for the LRIP systems through the testing phase. Contractor Logistics Support/Interim Contactor Logistics Support (CLS/ICLS) supports the fielding of thirteen (13) G/ATOR LRIP systems to include their maintenance and repair, and the maintenance and repair of LRIP systems undergoing test prior to fielding. Additionally, it is capturing the necessary usage data in preparation for Performance Based Logistics, monitoring DMS issues, completing provisioning requirements, updating the Interactive Electronic Training Manual (ITEM) for new software builds and preparing for and conducting three (3) New Equipment Training (NET) events in FY 20. These additional CLS efforts will continue through the Production and Deployment phase of the G/ATOR System.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15			P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)						Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) G/ATOR System (Active) ^(†)		2015 ⁽⁷⁾	Northrop Grumman / Linthicum, MD	SS / FPIF	Quantico, VA	Mar 2015	Oct 2017	2	32.511	Y		May 2013
1.1.1) G/ATOR System (Active) ^(†)		2016 ⁽⁸⁾	Northrop Grumman. / Linthicum, MD	SS / FPIF	Quantico, VA	Aug 2016	Jul 2018	3	33.764	Y		Oct 2015
1.1.1) G/ATOR System (Active) ^(†)		2017 ⁽⁹⁾	Northrop Grumman. / Linthicum, MD	SS / FPIF	Quantico, VA	Mar 2017	Mar 2019	3	31.837	Y		Oct 2015
1.1.1) G/ATOR System (Active) ^(†)		2018 ⁽¹⁰⁾	Northrop Grumman. / Linthicum, MD	SS / FPIF	Quantico, VA	Mar 2018	Mar 2020	3	31.837	Y		Oct 2015
1.1.1) G/ATOR System (Active) ^(†)		2019 ⁽¹¹⁾	Northrop Grumman.. / Linthicum, MD	SS / FPIF	Quantico, VA	Jun 2019	Jun 2021	2	29.839	Y		Sep 2017
1.1.1) G/ATOR System (Active) ^(†)		2020 ⁽¹²⁾	Northrop Grumman.. / Linthicum, MD	SS / FPIF	Quantico, VA	May 2020	May 2022	4	29.835	Y		Sep 2017
1.1.3) G/ATOR System (Reserve) ^(†)		2019	Northrop Grumman / Linthicum, MD	SS / FPIF	Quantico, VA	Jun 2019	Oct 2021	4	29.839	Y		Sep 2017
1.1.3) G/ATOR System (Reserve) ^(†)		2020	Northrop Grumman / Linthicum, MD	SS / FPIF	Quantico, VA	May 2020	Nov 2022	4	29.835	Y		Sep 2017

^(†) indicates the presence of a P-21

Footnotes:

- ⁽⁷⁾ Date of FY15 First Delivery is based on the G/ATOR LRIP contract awarded in March 2015.
- ⁽⁸⁾ Date of FY16 First Delivery is incentivized based on the G/ATOR GaN LRIP contract awarded in August 2016.
- ⁽⁹⁾ Date of FY17 First Delivery is based on the G/ATOR GaN LRIP contract option exercised March 2017.
- ⁽¹⁰⁾ Date of FY18 First Delivery is based on the G/ATOR GaN LRIP contract option exercised March 2018.
- ⁽¹¹⁾ Date of FY19 First Delivery is based on the G/ATOR FRP contract award anticipated 28 June 2019.
- ⁽¹²⁾ Date of FY20 First Delivery is based on the G/ATOR FRP contract award anticipated 31 May 2020.

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15										P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)										Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)												
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2015										Fiscal Year 2016													BALANCE		
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015										Calendar Year 2016															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP	
1.1.1) G/ATOR System (Active)																																
	1	2015	NAVY	2	0	2						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
	2	2016	NAVY	3	0	3																							A -	-	3	
	2	2017	NAVY	3	0	3																									3	
	2	2018	NAVY	3	0	3																									3	
	3	2019	NAVY	2	0	2																									2	
	3	2020	NAVY	4	0	4																									4	
1.1.3) G/ATOR System (Reserve)																																
	4	2019	NAVY	4	0	4																									4	
	4	2020	NAVY	4	0	4																									4	
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019															
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15										P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)										Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)															
Cost Elements <i>(Units in Each)</i>						Fiscal Year 2017														Fiscal Year 2018														BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017														Calendar Year 2018														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
1.1.1) G/ATOR System (Active)																																			
	1	2015	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1									0				
	2	2016	NAVY	3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1				
	2	2017	NAVY	3	0	3						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3				
	2	2018	NAVY	3	0	3																	A	-	-	-	-	-	-	-	3				
	3	2019	NAVY	2	0	2																									2				
	3	2020	NAVY	4	0	4																									4				
1.1.3) G/ATOR System (Reserve)																																			
	4	2019	NAVY	4	0	4																									4				
	4	2020	NAVY	4	0	4																									4				
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15										P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)										Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)																			
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2019										Fiscal Year 2020										BALANCE												
OCCO	MFR#	FY	SERVICE	PROCQTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019										Calendar Year 2020																						
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY		JUN	JUL	AUG	SEP								
1.1.1) G/ATOR System (Active)																																							
	1	2015	NAVY		2	2	0																										0						
	2	2016	NAVY		3	2	1	-	1																								0						
	2	2017	NAVY		3	0	3	-	-	-	-	-	1	-	1	-	1																0						
	2	2018	NAVY		3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1						0							
	3	2019	NAVY		2	0	2								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2							
	3	2020	NAVY		4	0	4																		A	-	-	-	-	-	-	-	-	-	-	-	-	4	
1.1.3) G/ATOR System (Reserve)																																							
	4	2019	NAVY		4	0	4								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4						
	4	2020	NAVY		4	0	4																		A	-	-	-	-	-	-	-	-	-	-	-	-	-	4
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP								

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15							P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)													Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)													
Cost Elements (Units in Each)							Fiscal Year 2021										Fiscal Year 2022										BALANCE						
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT				Calendar Year 2021										Calendar Year 2022													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY		JUN	JUL	AUG	SEP		
1.1.1) G/ATOR System (Active)																																	
	1	2015	NAVY		2	2	0																					0					
	2	2016	NAVY		3	3	0																					0					
	2	2017	NAVY		3	3	0																					0					
	2	2018	NAVY		3	3	0																					0					
	3	2019	NAVY		2	0	2	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	1	-	1	1	-	0
	3	2020	NAVY		4	0	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	1	
1.1.3) G/ATOR System (Reserve)																																	
	4	2019	NAVY		4	0	4	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1					0				
	4	2020	NAVY		4	0	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019															
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15							P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)												Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)															
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2023												Fiscal Year 2024												BALANCE			
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1.1.1) G/ATOR System (Active)																																		
	1	2015	NAVY		2	2	0																										0	
	2	2016	NAVY		3	3	0																										0	
	2	2017	NAVY		3	3	0																										0	
	2	2018	NAVY		3	3	0																										0	
	3	2019	NAVY		2	2	0																										0	
	3	2020	NAVY		4	3	1	1																										0
1.1.3) G/ATOR System (Reserve)																																		
	4	2019	NAVY		4	4	0																										0	
	4	2020	NAVY		4	0	4	-	1	-	1	1	-	1																			0	
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			

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Exhibit P-21, Production Schedule: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 15			P-1 Line Item Number / Title: 4655 / Ground/Air Task Oriented Radar (G/ATOR)		
			Item Number / Title [DODIC]: 1 / Ground/Air Task Oriented Radar (G/ATOR)		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Northrop Grumman - Linthicum, MD	2	8	9	0	5	31	36	0	5	26	31
2	Northrop Grumman. - Linthicum, MD	2	8	9	0	10	23	33	0	5	24	29
3	Northrop Grumman... - Linthicum, MD	2	8	9	0	5	24	29	0	5	24	29
4	Northrop Grumman - Linthicum, MD	2	8	9	0	5	28	33	0	5	30	35

"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: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)	P-1 Line Item Number / Title: 4616 / GCSS-MC

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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.871	1.990	1.187	4.484	0.000	4.484	1.214	1.239	1.266	1.291	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.871	1.990	1.187	4.484	0.000	4.484	1.214	1.239	1.266	1.291	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.871	1.990	1.187	4.484	0.000	4.484	1.214	1.239	1.266	1.291	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Global Combat Support System - Marine Corps/Logistics Chain Management (GCSS-MC/LCM) Family of Systems (FoS) serves as the primary technology enabler for the Marine Corps Logistics Modernization strategy. GCSS-MC/LCM provides the backbone for all logistics information required by Marine Forces and the Supporting Establishment. The core for GCSS-MC/LCM Increment 1 is a modern, commercial-off-the-shelf enterprise resource planning software (Oracle e-Business Suite). The Increment 1 design focused on enabling the warfighter to operate while deployed with reach back to Garrison from the battlefield. Increment 1 replaced 5 legacy supply and maintenance information technology systems and currently supports ~22,000 users world-wide. The focus of future functions will be enhancing capabilities in the areas of warehousing, distribution, logistics planning, decision support, depot maintenance, and integration with emerging technologies to improve asset visibility.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)						P-1 Line Item Number / Title: 4616 / GCSS-MC				
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Global Combat Support System Marine Corps (GCSS-MC)				- / 0.871	- / 1.990	- / 1.187	- / 4.484	- / 0.000	- / 4.484
P-40	Total Gross/Weapon System Cost				- / 0.871	- / 1.990	- / 1.187	- / 4.484	- / 0.000	- / 4.484
*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: FY2018 Base Appropriation Request: \$1.990M Funding continued to support the ongoing need for technology refresh of hardware and software in support of the sustainment of GCSS-MC/LCM Increment 1. Funding increase from FY2017 to FY2018 for AIT hardware and software tech refresh and Wireless Implementation across the MEFs. FY2019 Base Appropriation Request: \$1.187M Funding continues to support the the ongoing need for technology refresh of hardware and software in support of the sustainment of GCSS-MC/LCM Increment 1. Funding decrease from FY2018 to FY2019 of \$0.803M in accordance with the Service Cost Position and the reduced requirement for refreshed hardware and software for FY2019. FY2020 Base Appropriation Request: \$4.484M Funding will continue to support the ongoing need for technology refresh of hardware and software in support of the sustainment of GCSS-MC/LCM Increment 1. The funding increase from FY2019 to FY2020 of \$3.297M is in support of expanding the fielding of Warehousing Automated Information Technology hardware beyond the major logistics hubs, Supply Management Units (SMU), Repairable Issue Points (RIP), and Initial Issue Points (IIP) to the 140 operating force units' warehouses and storage sites across all three Marine Expeditionary Forces (MEF). This expansion to using units is a significant increase to the quantities in service. It will also support improvements to inventory management and asset visibility for USMC ground forces. Specifically, efficiency will be realized and come in the form of data accuracy through bar code availability instead of manual data input and in the ability to conduct annual rapid inventory management of install base items throughout the MEFs.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16							P-1 Line Item Number / Title: 4616 / GCSS-MC						Item Number / Title [DODIC]: 1 / Global Combat Support System Marine Corps (GCSS-MC)								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity (Units in Each)				-			-			-			-			-			-		
Gross/Weapon System Cost (\$ in Millions)				0.871			1.990			1.187			4.484			0.000			4.484		
Less PY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Net Procurement (P-1) (\$ in Millions)				0.871			1.990			1.187			4.484			0.000			4.484		
Plus CY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Total Obligation Authority (\$ in Millions)				0.871			1.990			1.187			4.484			0.000			4.484		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares (\$ in Millions)				-			-			-			-			-			-		
Gross/Weapon System Unit Cost (\$ in Dollars)				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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 - GCSS-MC/LCM Hardware Cost																					
Recurring Cost																					
1.1.1) Tech Refresh ⁽¹⁾		-	-	0.291	-	-	0.930	-	-	0.460	-	-	3.584	-	-	-	-	-	3.584		
Subtotal: Recurring Cost		-	-	0.291	-	-	0.930	-	-	0.460	-	-	3.584	-	-	-	-	-	3.584		
Subtotal: Hardware - GCSS-MC/LCM Hardware Cost		-	-	0.291	-	-	0.930	-	-	0.460	-	-	3.584	-	-	-	-	-	3.584		
Software - GCSS-MC/LCM Software Cost																					
Recurring Cost																					
2.1.1) Tech Refresh		-	-	0.450	-	-	0.820	-	-	0.477	-	-	0.500	-	-	-	-	-	0.500		
Subtotal: Recurring Cost		-	-	0.450	-	-	0.820	-	-	0.477	-	-	0.500	-	-	-	-	-	0.500		
Subtotal: Software - GCSS-MC/LCM Software Cost		-	-	0.450	-	-	0.820	-	-	0.477	-	-	0.500	-	-	-	-	-	0.500		
Support - GCSS-MC/LCM HW/SW Engineering Cost																					
3.1) Tech Refresh		-	-	0.130	-	-	0.240	-	-	0.250	-	-	0.400	-	-	-	-	-	0.400		
Subtotal: Support - GCSS-MC/LCM HW/SW Engineering Cost		-	-	0.130	-	-	0.240	-	-	0.250	-	-	0.400	-	-	-	-	-	0.400		
Gross/Weapon System Cost		-	-	0.871	-	-	1.990	-	-	1.187	-	-	4.484	-	-	0.000	-	-	4.484		
Footnotes:																					

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16	P-1 Line Item Number / Title: 4616 / GCSS-MC	Item Number / Title [DODIC]: 1 / Global Combat Support System Marine Corps (GCSS-MC)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(1) Funding increase from FY2019 to FY2020 expands the fielding of Warehousing Automated Information Technology hardware beyond major logistics sites to the operating force's warehouses and storage sites.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)						P-1 Line Item Number / Title: 4733 / Fire Support System						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	349.741	22.260	64.926	35.488	0.000	35.488	26.415	89.426	77.153	78.555	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	349.741	22.260	64.926	35.488	0.000	35.488	26.415	89.426	77.153	78.555	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	349.741	22.260	64.926	35.488	0.000	35.488	26.415	89.426	77.153	78.555	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:												
Fire Support System (FSS) provides the United States Marine Corps (USMC) critical operational and logistics capabilities in artillery weapons, fire direction, and targeting systems. FSS provides the systems needed to create a fully networked sensor to shooter kill chain for the USMC Ground Combat Element. This includes the following projects:												
Fire Support Mods (FSM): FSM supports a set of Joint Service and Marine Corps unique efforts to address critical operational capabilities in artillery weapons and fire direction control systems and equipment such as Improved Position and Azimuth Determining Systems (IPADS), Joint Terminal Attack Controller Laser Target Designator (JTAC LTD), Global Positioning System Survey Replacement (GPSSR), Marine Artillery Survey Set (MASS), the Modeled Meteorological Information Manager (MMIM), Lethal Miniature Aerial Missile System (LMAMS), and Organic Precision Fires (OPF). OPF is a tiered scalable weapon system that will provide Marines the ability to accurately attack and destroy targets throughout the battlespace. OPF will increase lethality of the Marine Air-Ground Task Force (MAGTF), reduce collateral damage, and provide an affordable precision strike fire support system.												
Common Laser Range Finder (CLRF): The CLRF Integrated Capability (CLRF IC) integrates laser targeting capabilities to provide lightweight man portable targeting systems consistent with Strategy & Vision 2025 and the Commandant's Planning Guidance. The CLRF IC strategy includes replacement of the AN/PEQ-13, the AN/PEQ-17, and the AN/PEQ-25 into a single hand held targeting system, the Next Generation Hand Held Targeting System (NGHTS). This strategy will result in two affordable systems, a target locating system for the Joint fires observer, and a laser designator for the JTAC that will support operational targeting requirements well into the 2030 timeframe as well as provide significant reductions in weight and power requirements.												
Family of Target Acquisition Systems (FTAS): The FTAS provides the MAGTF the capability to locate, identify, and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder Radar, the AN/TPQ-49 Lightweight Counter Mortar Radar, Acoustic Ground Counter Fire Sensor (GCFS), and the AN/TSQ-267 Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. The program will continue to address system issues that arise due to Diminishing Manufacturing Sources and Material Shortages (DMSMS) items within the FTAS. The USMC assumed the role of Primary Inventory Control Activity (PICA) for the AN/TPQ-49 in FY15 when the Army divested itself from the system.												
Target Hand-Off System (THS): The THS addresses a Marine Corps operational requirement for a lightweight, handheld, and digital target acquisition engagement coordination system. The THS is interoperable with all video downlink, Fire Support platforms, and Target Locating Devices designed for the Forward Air Controllers (FACs), Forward Observers (FOs), Fire Support Teams (FSTs), Firepower Control Teams												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)					P-1 Line Item Number / Title: 4733 / Fire Support System					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
(FCTs), Tactical Air Control Parties (TACPs), and Reconnaissance Teams. The THS provides the ability to integrate video and sensor information to quickly acquire and digitally prosecute targets in day, night, and near-all-weather visibility conditions in order to conduct precise and rapid indirect surface fire support, Naval Surface Fire Support (NSFS), and Close Air Support (CAS). Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS): AFATDS FoS consists of three programs: AFATDS, Back Up Computer System (BUCS), and Mobile Tactical Shelter (MTS). The AFATDS automates the fire planning, tactical fire direction, and fire support coordination required to support maneuver from the sea and subsequent operations ashore. AFATDS integrates all supporting arms assets within the MAGTF such as mortars, cannon artillery, rockets and missiles, close air support, and naval surface fire support systems. BUCS is a hand-held computer system designed to provide a backup to the AFATDS in computing ballistic firing solutions, as well as provide survey and meteorological functions in support of artillery. Additionally, BUCS is the primary ballistic firing solution system during Ship To Objective Maneuver (STOM). The MTS is a Lightweight Multi-purpose Shelter (LMS) mounted on a High Mobility Multipurpose Wheeled Vehicle (HMMWV) which protects both the AFATDS and the BUCS from the environment. The MTS enables rapid emplacement and displacement of fire support elements and provides communications on the move. Lethal Miniature Aerial Missile System (LMAMS): LMAMS is a loitering, precision-guided missile that is man-portable, single-use, and organic at the small unit level. LMAMS provides precise lethal fires beyond reach of organic direct-fire weapon systems and performs target attack against personnel in the open or in defilade as well as soft-skinned vehicles during offensive, defensive, stability, and civil support operations. LMAMS provides precision lethality, while minimizing collateral damage in complex and cluttered operational areas.										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	21.592	63.574	34.494	-	34.494	25.400	88.398	76.105	77.486
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.668	1.352	0.994	-	0.994	1.015	1.028	1.048	1.069
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	22.260	64.926	35.488	-	35.488	26.415	89.426	77.153	78.555

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)						P-1 Line Item Number / Title: 4733 / Fire Support System				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Fire Support System	P-5a, P-21			- / 349.741	- / 22.260	- / 64.926	- / 35.488	- / -	- / 35.488
P-40	Total Gross/Weapon System Cost				- / 349.741	- / 22.260	- / 64.926	- / 35.488	- / 0.000	- / 35.488
*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: Beginning in FY19, AFATDS and THS funding has been realigned from BLI 4631, COMMAND POST SYSTEMS to BLI 4733, FIRE SUPPORT SYSTEMS. Beginning in FY19, FTAS funding has been realigned from BLI 4650, RADAR SYSTEMS to BLI 4733, FIRE SUPPORT SYSTEMS. FY 2018 Base Appropriation Request: \$22.260M FSM - \$4.064M IPADS - Funding procured IPADS replacement systems. Funding provided support for modernization and upgrades to currently fielded systems. These systems are fielded to both the active (\$3.396M) and reserve (\$0.668M) components. CLRF - \$18.196M Funding continued to procure and field CLRF Integrated Capability (IC), full rate production systems to replace the current capability with enhanced targeting abilities and reduced system weight. FY 2019 Base Appropriation Request: \$64.926M FSM - \$4.158M Funding provides support for modernization and upgrades to currently fielded systems. These systems are fielded to both the active (\$3.099M) and reserve (\$1.059M) components. Increase of \$0.094M from FY18 to FY19 supports procurement of IPADS replacement systems. FTAS - \$2.867M (Active \$2.574M/Reserve \$.293M) Funding procures ECP Modification Kits and will continue to address DMSMS issues within the FTAS. These kits are fielded to both the active (\$2.574M) and reserve (\$0.293M) components. Beginning in FY19, FTAS funding has been realigned from BLI 4650, RADAR SYSTEMS to BLI 4733, FIRE SUPPORT SYSTEMS. Realignment of effort to new BLI in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. AFATDS - \$12.521M Funds continue to procure a modernized, common shelter that will fulfill the requirements of the Mobile Tactical Shelter (MTS) and the Target Processing Set (TPS). Beginning in FY19, AFATDS funding has been realigned from BLI 4631, COMMAND POST SYSTEMS to BLI 4733, FIRE SUPPORT SYSTEMS. Realignment of effort to new BLI in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. THS - \$23.893M Budget increase of \$5.908M for THS (previously BLI 4631) from FY18 to FY19 is due to procurement of VHF (very high frequency) radios required to support digital transmission of targeting and fires data. Funds were also used to procure THS end user devices to support a scheduled hardware refresh. Beginning in FY19, THS funding has been realigned from BLI 4631, COMMAND POST SYSTEMS to BLI 4733, FIRE SUPPORT SYSTEMS. Realignment of effort to new BLI in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. CLRF - \$15.904M Funding continues to procure and field CLRF Integrated Capability (IC), full rate production systems to replace the current capability with enhanced targeting abilities and reduced system weight. Engineering Change Proposals (ECPs) will be conducted to increase operational availability and increase system longevity.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4733 / Fire Support System
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
FY 2020 Base Appropriation Request: \$35,488 FSM - \$4.299M Funding will continue to provide support for modernization and upgrades to currently fielded systems to include procuring IPADS replacements on a cycle. These systems are fielded to both the active (\$3.603M) and reserve (\$0.696M) components. The increase of \$0.141M from FY19 to FY20 will support the procurement of additional IPADS replacement systems. FTAS - \$2.943M (Active \$2.645M/Reserve \$.298M) Funding will procure ECP Modification Kits and will continue to address diminishing manufacturing sources and material shortages issues within the FTAS. These kits are fielded to both the active (\$2.645M) and reserve (\$0.298M) components. Increase of \$0.076M from FY19 funding is due to an increase in the number of kits produced during FY20. AFATDS - \$12.852M Funds will continue to procure a modernized, common shelter that will fulfill the requirements of the hardware refresh including the Mobile Tactical Shelter (MTS) and the Target Processing Set (TPS). The funding increase from FY19 to FY20 of \$2.6M for the MTS shelters is to procure an additional 23 shelters. Funding decrease from FY19 to FY20 of \$2.38M for Hardware Refresh is due to the procurement of new tablet devices which have a lower unit cost than the laptops procured in FY19. Overall increase in AFATDS from FY19 to FY20 is \$0.331M. THS - \$2.439M Funds will be used to complete refresh of the necessary cabling to support fielding of new VHF radios. A decrease of \$22.300M from FY19 to FY20 is due to the completion of the VHF radio procurement required to support the digital transmission of fires data. CLRF - \$12.955M Funds will be used to implement ECPs on post Full Rate Production (FRP) CLRF systems to implement capability enhancements and a life cycle extension plan that will extend the service life of the system an additional ten years. The ECP will include a refresh of obsolete components, replace the digital magnetic compass and Input/Output card which will improve usability, and allow digital image export. A decrease of \$2.949M from FY19 to FY20 is due to the completion of the procurement of CLRF IC systems. The ECP in FY19 and FY20 accomplishes updates to the digital magnetic compass and short wave infrared duty cycle as well as image export. It will be implemented into production in FY19 starting at system number 700 and will be retrofitted into the first 700 systems in FY20. LMAMS - \$0.0M A decrease of \$5.583M from FY19 to FY20 is due to the completion of hardware procurement. OCO: FY 2019 Overseas Contingency Operations (OCO) Request: \$5.583M LMAMS - \$5.583M Funding procures necessary components to support operations and procures 50 Lethal Miniature Aerial Missile System (LMAMS) All-up-Rounds (AUR).		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16							P-1 Line Item Number / Title: 4733 / Fire Support System								Aggregated Items Title: Fire Support System					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) CLRF																				
1.1) CLRF - FRP Units Active ^{(1)(t)}	A		37,627.24	279	10.498	37,500.00	420	15.750	37,500.00	196	7.350	-	-	-	-	-	-	-	-	-
1.2) CLRF - Active Procurement Support	A		-	-	8.292	-	-	2.446	-	-	0.147	-	-	1.593	-	-	-	-	-	1.593
1.3) CLRF Active LRIP	A		48,557.69	104	5.050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) CLRF - Reserve LRIP	A		48,543.48	46	2.233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) CLRF - ECPs ⁽²⁾	A		-	-	-	-	-	-	-	-	8.407	-	-	11.362	-	-	-	-	-	11.362
Subtotal: 1) CLRF			-	-	26.073	-	-	18.196	-	-	15.904	-	-	12.955	-	-	-	-	-	12.955
2) FSM																				
2.1) FSM - Active	A		-	-	61.816	-	-	3.396	-	-	3.099	-	-	3.603	-	-	-	-	-	3.603
2.2) FSM - Reserve	A		-	-	4.139	-	-	0.668	-	-	1.059	-	-	0.696	-	-	-	-	-	0.696
Subtotal: 2) FSM			-	-	65.955	-	-	4.064	-	-	4.158	-	-	4.299	-	-	-	-	-	4.299
3) Prior Year Cumulative Funding																				
3.1) Prior Year Cum Funding	A		-	-	257.713	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Prior Year Cumulative Funding			-	-	257.713	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) FTAS																				
4.1) FTAS Upgrades and Installation ⁽³⁾	A		-	-	-	-	-	-	-	-	2.574	-	-	2.645	-	-	-	-	-	2.645
4.2) FTAS Upgrades and Installation (Reserve)	A		-	-	-	-	-	-	-	-	0.293	-	-	0.298	-	-	-	-	-	0.298
Subtotal: 4) FTAS			-	-	0.000	-	-	-	-	-	2.867	-	-	2.943	-	-	-	-	-	2.943
5) AFATDS FoS																				
5.1) Fielding Support	A		-	-	-	-	-	-	-	-	0.880	-	-	0.890	-	-	-	-	-	0.890
5.2) Mobile Tactical Shelter Modernization ⁽⁴⁾	A		-	-	-	-	-	-	-	-	2.938	-	-	5.540	-	-	-	-	-	5.540
5.3) Hardware Refresh ⁽⁵⁾	A		-	-	-	-	-	-	-	-	6.203	-	-	3.822	-	-	-	-	-	3.822
5.4) Ancillary Hardware Components ⁽⁶⁾	A		-	-	-	-	-	-	-	-	2.500	-	-	2.600	-	-	-	-	-	2.600
Subtotal: 5) AFATDS FoS			-	-	0.000	-	-	-	-	-	12.521	-	-	12.852	-	-	-	-	-	12.852
6) THS																				
6.1) Hardware/ Software Integration	A		-	-	-	-	-	-	-	-	1.400	-	-	0.244	-	-	-	-	-	0.244

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16								P-1 Line Item Number / Title: 4733 / Fire Support System							Aggregated Items Title: Fire Support System				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
6.2) Hardware Refresh	A		-	-	-	-	-	-	-	-	3.639	-	-	2.195	-	-	-	-	-	2.195
6.3) Hardware Procurement ^(†)	A		-	-	-	-	-	-	42,850.00	440	18.854	-	-	-	-	-	-	-	-	-
Subtotal: 6) THS			-	-	0.000	-	-	-	-	-	23.893	-	-	2.439	-	-	-	-	-	2.439
7) LMAMS																				
7.1) Hardware Procurement ^(†)	A		-	-	-	-	-	-	55,830.00	100	5.583	-	-	-	-	-	-	-	-	-
Subtotal: 7) LMAMS			-	-	0.000	-	-	-	-	-	5.583	-	-	-	-	-	-	-	-	-
Total			-	-	349.741	-	-	22.260	-	-	64.926	-	-	35.488	-	-	-	-	-	35.488

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

(†) indicates the presence of a P-5a

Footnotes:

(1) Decrease from FY19 to FY20 is due to the completion of the procurement of CLRF IC systems.

(2) The ECP in FY19 and FY20 accomplishes updates to the digital magnetic compass and short wave infrared duty cycle as well as image export. It will be implemented into production in FY19 starting at system number 700 and will be retrofitted into the first 700 systems in FY20.

(3) FY20 LCMR Tech Refresh will be an estimated 15 systems.

(4) FY20 MTS procurement will be an estimated quantity of 50 shelters.

(5) FY20 the hardware refresh is to procure new tablet devices (400) for the AFATDS software. FY21 the hardware refresh is to support the AFATDS 7.0 new user interface.

(6) This ancillary hardware components are to support the Mobile Tactical Shelter cables, raceways, and other infrastructure enhancements.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16			P-1 Line Item Number / Title: 4733 / Fire Support System						Aggregated Items: Fire Support System				
Item Number / Title [DODIC]	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) CLRF													
1.1) CLRF - FRP Units Active ^{(1)(†)}		2018	Kollsman, Inc. / Manchester, NH	C / FFP	Quantico, VA	Feb 2018	Jul 2018	420	37,500.00	Y		Jul 2014	
1.1) CLRF - FRP Units Active ^{(1)(†)}		2019	Kollsman, Inc. / Manchester, NH	C / FFP	Quantico, VA	Mar 2019	Aug 2019	196	37,500.00	N		Jul 2014	
6) THS													
6.3) Hardware Procurement		2019	Harris Corp @Rochester, NY / rochester, NY	C / FFP	San Diego, CA	Dec 2018	Jun 2019	440	42,850.00	Y		Oct 2017	
7) LMAMS													
7.1) Hardware Procurement ^(†)	✓	2019	AeroVironment Inc.@Simi Valley, CA / Simi, CA	C / TBD	Simi Valley, CA	Nov 2018	Aug 2019	100	55,830.00	Y			

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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	16	2018	NAVY		420	0	420					A -	-	-	-	-	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16										P-1 Line Item Number / Title: 4733 / Fire Support System													Aggregated Items: Fire Support System												
Items <i>(Units in Each)</i>							Fiscal Year 2020												Fiscal Year 2021												BALANCE				
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
1) CLRF																																			
1.1) CLRF - FRP Units Active ⁽¹⁾																																			
Prior Years Deliveries: 279																																			
	16	2018	NAVY		420	420	0																												0
	16	2019	NAVY		196	70	126	35	35	35	21																								0
7) LMAMS																																			
7.1) Hardware Procurement																																			
✓	17	2019	NAVY		100	100	0	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	0			

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16				P-1 Line Item Number / Title: 4733 / Fire Support System				Aggregated Items: Fire Support System			

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Kollsman, Inc. - Manchester, NH	80	300	500	2	2	9	11	2	2	5	7
2	AeroVironment Inc.@Simi Valley, CA - Simi, CA			TBD	0	0	9	9	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: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)	P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206625M, 0305208M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	543.625	56.738	72.968	56.896	0.000	56.896	51.867	40.783	45.829	58.736	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	543.625	56.738	72.968	56.896	0.000	56.896	51.867	40.783	45.829	58.736	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	543.625	56.738	72.968	56.896	0.000	56.896	51.867	40.783	45.829	58.736	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.356	0.421	-	-	-	-	-	-	-	-	0.777
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This budget line item includes Military Intelligence Program (MIP) funds for Marine Corps Intelligence capabilities necessary to support the employment of intelligence, reconnaissance, surveillance (ISR), and target acquisition resources integral to delivering decision advantage at the speed of operational relevance outlined in the 2018 National Defense Strategy. Marine Corps intelligence capabilities are divided into three functional areas organized along intelligence processes: Sensing (Persistent ISR), Analysis (Distributed Common Ground/Surface System Marine Corps (DCGS-MC)), and Dissemination (Intelligence Dissemination and Utilization (IDU)). This project funds the Sensing and Dissemination portfolios while the Analysis portfolio is budgeted under the DCGS-MC PE/BLI.

PERSISTENT INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (PISR) GROUND SYSTEMS: PISR is a comprehensive strategy that synchronizes organic and external ISR assets in support of Marine Air-Ground Task Force (MAGTF) operations. This capability involves sensing the operational environment through a variety of systems, from satellites overhead to reconnaissance Marines on the ground. PISR incorporates terrestrial sensing capability from the following ground collection systems.

Terrestrial Collection provides a tactical ground sensor Family of Systems (FoS) that are organic to the MAGTF and facilitate near-real time PISR sensing to MAGTF decision makers and users. Sensors are networked to the maximum extent possible to enable the sharing of standard data and information to support all six Marine Corps warfighting functions (C2, Intelligence, Operations, Protection, Fires, and Maneuver) with both targeting and battlespace awareness. An array of sensor delivery methods, and a variety of sensor characteristics enable the MAGTF to sense air (low altitude), land (surface, underground), sea (surface and subsurface), environmental effects (weather), and man-made objects (e.g. inside buildings) to determine threat location, disposition, movement and direction. The Terrestrial Collection portfolio includes, but not limited to, Ground Based Operational Surveillance System (GBOSS), MAGTF Secondary Imagery Dissemination System (MSIDS), and Tactical Remote Sensor System (TRSS). GBOSS is an expeditionary, ground-based, self-contained, multi-spectral sensor-oriented, persistent surveillance system used to observe, collect, detect, identify, classify, track, and report on contacts, objects of interest, and assessed threats twenty-four hours a day utilizing a fused video and sensor data display. MSIDS provides organic tactical digital imagery collection, transmission and receiving capability to the MAGTF Commander. TRSS provides all-weather direction, location determination, targeting, and tactical indications and warning of enemy activity in the MAGTF Commander's Area of Interest.

Counter Intelligence and Human Intelligence (CI/HUMINT) Equipment Program (CIHEP) provides each Marine CI/HUMINT Company within the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE) with an integrated, standardized, and interoperable suite of information and communication systems. The CIHEP program provides specialized equipment that is lightweight, modular, and tailorable, in deployable packages to conduct full spectrum, tactical CI and HUMINT activities, to include Technical Surveillance Countermeasures (TSCM) operations. TSCM operations use techniques to detect, neutralize, and exploit hostile technical surveillance technologies and hazards that permit the unauthorized access to or removal of information. CI/HUMINT elements are generally task-organized in support of a MAGTF or other supported commanders, providing them the capability to rapidly collect, process, and disseminate counterintelligence and human intelligence information in support of military planning and operations. CIHEP is comprised of ten modules of commercial and government off the-shelf equipment. Different components are selected for refresh each year in order to maintain current capabilities and

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206625M, 0305208M
Line Item MDAP/MAIS Code: N/A		
ensure interoperability and standardization with related systems. This results in an equipment suite that enhances the operating force's CI/HUMINT capabilities, while maintaining interoperability within the USMC and joint CI/HUMINT communities. The modularity of the CIHEP program allows Marines to perform a variety of missions in support of commanders, while carrying only those items necessary to accomplish the mission. CIHEP provides state- of-the-art mission critical information protection capabilities, as well as the ability to detect, identify, and locate specific technical threats. Tactical Signal Intelligence (SIGINT) Collection System (TSCS) provides rapidly deployable capability that is the only Tactical Signals collection capability in the MAGTF in both man packable and vehicular configurations, and provides collections capabilities needed to develop intelligence. The TSCS Family of Systems (FoS) incorporates the Radio Reconnaissance Equipment Program (RREP) and Team Portable Collection Systems - Multi-Platform Capable (TPCS-MPC) programs into a single program, providing a modular and scalable suite of equipment that exploits information from more technically advanced target sets. The TSCS FoS has an incremental acquisition strategy, providing Technical Refresh for legacy TPCS-MPC and RREP systems as the systems become obsolete and/or require technology insertions to maintain pace with our adversaries. The prioritization of capabilities included in each increment is based on obsolescence and required capability upgrades against advanced target sets. Fluctuations within the funding profile is due to different components being refreshed each year. Communication Emitter Sensing and Attacking System (CESAS) is the sole USMC high power, man-packable, and ground mobile Electronic Attack (EA) asset. CESAS supports the MAGTF Commander in the execution of his Electronic Warfare (EW) operations and Information Operations, by detecting, denying, and disrupting hostile communication emitters across a broad range of communication frequencies. CESAS covers the High Frequency (HF), Very High Frequency (VHF), and Ultra High Frequency (UHF) frequency ranges against enemy emitters using modern modulation schemes. CESAS allows flexible employment to conduct EA while on the move or in a stationary position, thus optimizing the Commander's ability to employ this asset for the greatest success of the mission. CESAS uses an incremental acquisition strategy, providing Technical Refresh for legacy systems as the systems become obsolete and/or require technology insertions to maintain pace with our adversaries. PROCESSING, EXPLOITATION, ANALYSIS AND PRODUCTION SYSTEMS: Processing, exploitation, analysis, and production actions of the Intelligence process enables Marines to understand the all-source information/data revealed by PISR. The Distributed Common Ground System - Marine Corps (DCGS-MC) Enterprise (BLI 4767) will serve as the Marine Corps ISR Enterprise (MCISRE) backbone, migrating select capabilities into a single, integrated, net-centric baseline via clearly defined capability drops. The Intelligence Analysis System (IAS) FoS (All-Source) and the Technical Control Analysis Center (TCAC) FoS (Signal Intelligence (SIGINT)) transition to Project 2268 DCGS-MC beginning FY20. INTELLIGENCE DISSEMINATION AND UTILIZATION (IDU) SYSTEMS: The IDU capability set performs the dissemination and integration functions of the Intelligence process. Dissemination connects the Intelligence product to the Commander who "operationalizes" these products through informed decisions. The Intelligence Broadcast Receiver (IBR) acquisition program is a family of terminals that conform to the Department of Defense (DoD) Integrated Broadcast Service (IBS) objectives of interoperability and commonality to receive and process near-real time multi-intelligence data. The IBR family of terminals provide MAGTF Commanders with the only direct access to IBS data via UHF Satellite Communications (SATCOM) broadcast channels. The IBR program is an evolving, multi-Service architecture designed to keep pace with Commanders' targeting and information requirements and conforms to the DoD IBS objectives of interoperability and commonality, which is currently accomplished using the Universal Serial Bus (USB) Embedded National Tactical Receiver (ENTR). The ENTR Version 4 (V4) will supplement and replace the USB ENTR which is no longer in production. The ENTR V4 provides a 50% weight reduction and doubles the life expectancy of the battery compared to the USB ENTR. Additionally, the IBR program is researching technology to meet the existing transceiver requirement identified in the Joint Tactical Terminal Joint Operational Requirements Document (JORD). The IBR family of terminals receive Blue Force Tracker data, which is a key element in developing and maintaining situational awareness as it relates to the common threat/common operating picture. The IBR provides NRT strategic, theater, and tactical sensor-to-shooter connectivity as well as NRT Theater Missile Defense indications and warnings. Additionally, the IBR provides connectivity to IBS Common Interactive Broadcast and IBS Alternative Path. Joint Worldwide Intelligence Communications System (JWICS) is the Top Secret Sensitive Compartmented Information (TS/SCI) portion of the Defense Information System Network. It incorporates advanced networking technologies that permit point-to-point or multi-point information exchange involving voice, text, graphics, data, and video teleconferencing within the DoD Intelligence Community. JWICS provides Marine Forces with special intelligence that significantly enhances the detail and quality of intelligence support that intelligence organizations provide to operating forces. Sensitive Compartmented Information Communications (SCI COMMS) is a Super-High Frequency multi-band satellite communications Family of Systems (FoS), that provides a tactical capability at the Top Secret (TS)/SCI and Secret Collateral levels to USMC intelligence units. The SCI COMMS FoS is the only deployable communications system that is dedicated for TS/SCI data and voice communications that can receive, transmit, and disseminate bulk data and imagery products to and from national tactical intelligence sources. The FoS consists of palletized, team level, and man-packable systems - TROJAN SPIRIT, High Bandwidth Special Intelligence-Palletized Terminal (HBSI-PT), and Sensitive Compartmented Intelligence Kit (SCIK) - which provide USMC tactical commanders with high-capacity, near-real-time access		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)						P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206625M, 0305208M				
Line Item MDAP/MAIS Code: N/A										
to intelligence from national agencies, joint, coalition, service activities, intelligence producers, and other tactical units via connectivity to Joint Worldwide Intelligence Communications System, National Security Agency (NSA) Network, coalition networks, and Secret Internet Protocol Router Network.										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	55.732	72.439	56.896	-	56.896	51.867	40.783	45.829	58.736
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.006	0.529	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	56.738	72.968	56.896	-	56.896	51.867	40.783	45.829	58.736

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Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)					P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206625M, 0305208M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Intelligence Support Equipment	P-5a, P-21			- / 543.625	- / 56.738	- / 72.968	- / 56.896	- / -	- / 56.896
P-40	Total Gross/Weapon System Cost				- / 543.625	- / 56.738	- / 72.968	- / 56.896	- / 0.000	- / 56.896
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Base Appropriation Request: \$56.738M (\$55.732M Active; \$1.006M Reserve)										
CESAS: \$6.744M procured Communication Emitter Sensing and Attacking System (CESAS II) ground electronic attack systems, Constructive Electromagnetic Operational Environment System (CEMOES) (formerly Electromagnetic Spectrum Operations Range (EMSOR)), production support for the build of Light Armored Vehicle Electronic Warfare (LAV-EW) Platform Integration Kit (PIK) and other fielding and initial support. These procurements will provide required ground mobile electronic attack capability and a unit-employable capability that replicates a radio frequency portion of the electromagnetic operating environment at training ranges to meet planned production schedule.										
CIHEP: \$3.525M procured equipment such as components for the Technical Surveillance Countermeasures (TSCM), Commercial SATCOM Set (CSCS) equipment and Broadband Global Area Network (BGAN) Antenna.										
G-BOSS: \$3.274M provided sensors and other hardware in support of the tech refresh for current systems. This refresh addressed portions of all three G-BOSS variants (G-BOSS Light (GBL), G-BOSS Medium (GBM), G-BOSS Heavy (GBH). Prior to FY2018, GBOSS had Overseas Contingency Operations PMC funding for FY2012, FY2013, and FY2016 in BLI 6438, Physical Security Equipment. Funding changes after FY18 reflect the merging of GBOSS to Terrestrial Collection.										
IAS: \$13.544M (\$12.538M Active; \$1.006M Reserves) procured fielding and technical support for the Tier III Intelligence Workstation and complete procurement of software enhancements for the Advanced Analytics capability. The Intelligence Workstation is required for receiving, parsing, analyzing and disseminating fused all-source intelligence data.										
IBR: \$6.040M procured Embedded National Tactical Receiver (ENTR) Version 4 systems, components, software and support. These systems, supporting eight (8) battalions, will be fielded to the company-level, and provide the capability of strategic, theater and tactical sensor-to-shooter intelligence data to the tactical edge of the battlefield.										
JWICS: \$6.498M procured garrison and tactical equipment and integration costs for SCI Enterprise Office (SEO) and the Marine Corps Intelligence, Surveillance and Reconnaissance Enterprise (MCISRE) Fixed Site located at the Marine Corps Intelligence Activity (MCIA). Funding will procure garrison hardware such as desktops, laptops, servers, routers, switches, maintenance of equipment, technical refreshes of hardware, Electronic Key Management System (EKMS) for SEO services and Storage Area Network (SAN/NAS). Funding will procure hardware and software that support the processing of image and video collection with AWCFT algorithms and data display. Funds will also provide for the integration of image and video sensor code with the AWCFT AI/ML/CV algorithms. This capability will provide Marine Corps PED analysts with a semi-automated image and video capability in support of multiple CCMDs										
MSIDS: \$1.061M procured imagery transmission components such as laptops, ancillary equipment, and support to comply with the Microsoft Windows 10 DoD mandate in providing MAGTF commander the ability to transmit video and sill imagery from eyes-on-target ashore in remote/austere locations from MSIDS outstation terminals to the Command Operations Center to support intelligence imagery gathering requirements. Funding changes after FY18 reflect the merging of MSIDS to Terrestrial Collection.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206625M, 0305208M
Line Item MDAP/MAIS Code: N/A		
SCI COMMS: \$6.402M procured SCIK and HBSI-PT systems, SCIK X-Band Kits, crypto for HBSI-PT and SCIK systems, network packages as part of the security-based product improvements for the HBSI-PT and SCIK systems, and program support. TRSS: \$2.638M provided for the initial procurement of the Common Sensor Radio (CSR), which will allow for sensors to be interoperable with other Marine Corps sensors (such as GBOSS) and Joint sensors. Funding also provided for the initial procurement of Air Delivered Unattended Ground Sensors (ADUGS) components. Funding changes after FY18 reflect the merging of TRSS to Terrestrial Collection. TCAC: \$4.581M Provided funding for RAWS, CDS, and TWS software fielding. Provided for training, labor, and logistics support enabling a complete refresh of the TWS authorized acquisition objective (AAO) in support of MEFs (Radio Battalions) and MARSOC. TSCS: \$2.431M procured Legacy Signals of Interest (SOI) capability enhancements such as Digital Network Intelligence (DNI)/Dual Receiver Replacement (DRR) receiver upgrades and technology inserts. Legacy SOI will provide increased capability to SIGINT units while DNI/DRR enhancements will expand the software defined radio capability making use of common hardware. FY 2019 Base Appropriation Request: \$72.968M (\$72.439M Active; \$0.529M Reserve) CESAS: \$5.556M initiates and completes procurement of 19 Communication Emitter Sensing and Attacking System (CESAS II) man-packable ground electronic attack systems. These procurements will provide required man-packable ground mobile electronic attack capability to meet planned production schedule. Decrease of \$3.667M from FY18 to FY19 aligns funding to procurement schedule for CESAS II. CIHEP: \$6.066M procures licenses and components for Media Exploitation (MEDEX) suites which will maintain Authority To Operate and keep pace with industry standard technology; will procure Data Processing Module software to interface with the new Mobile user Objective System waveform which will increase the capability to transmit intelligence data over tactical radios; will continue to procure components for the Technical Surveillance Countermeasures (TSCM) which will modernize current capability and provide one new system. Increase of \$2.541M from FY18 to FY19 reflects procurement of components for TSCM. IAS: \$9.570M (\$9.041M Active; \$0.529M Reserves) supports the procurement of hardware associated with the Tier I server refresh, Tier II common components and Tier III technical fielding support. Increase of \$1.174M from FY18 to FY19 supports the Tier I server procurement. IBR: \$3.472M procures Embedded National Tactical Receiver (ENTR) Version 4 systems, components and support. These systems, supporting eight (8) battalions, will be fielded to the company-level, and provide the capability of strategic, theater and tactical sensor-to-shooter intelligence data to the tactical edge of the battlefield. Decrease of \$2.568M from FY18 to FY19 reflects funding aligned with procurement plan and support schedule. JWICS: \$4.615M procures garrison and tactical equipment and integration costs for SCI Enterprise Office (SEO) and the Marine Corps Intelligence, Surveillance and Reconnaissance Enterprise (MCISRE) Fixed Site located at the Marine Corps Intelligence Activity (MCIA). Funding will procure garrison hardware such as desktops, laptops, servers, routers, switches, maintenance of equipment, technical refreshes of hardware, Electronic Key Management System (EKMS) for SEO services and Storage Area Network (SAN/NAS). Reduction to the JWICS program constricts access to National intelligence data, services and assets in support of current and future operations of the Marine Corps Leaders. Reduction puts the primary conduit for national-to-tactical SCI integration, network operations, specialized capabilities, remote production, exploitation, and dissemination across all intelligence domains at risk. SCI COMMS: \$7.325M procures modification kits and upgrades such as, HBSI-PT systems, modems for HBSI-PT, updated test measurement and diagnostic equipment; and fielding and initial support. Increase of \$.923M reflects modification and upgrades which will increase security and mitigate obsolescence. TCAC: \$6.749M procures Remote Analysis Workstations (RAWs) Hardware Refresh and supports fielding activities related to the delivery of the TWS and TCAC-G and software baseline for TCAC FoS. Increase of \$5.168M from FY18 base to FY19 base reflects funding aligned with procurement plan and refresh schedule.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206625M, 0305208M
Line Item MDAP/MAIS Code: N/A		
TSCS: \$23.173M procures TSCS FoS Increment I, which consists of Core Receivers and Tactical Servers. The TSCS Core Receivers are the foundation of the TSCS FoS, replacing several of the TPCS receivers, and are capable of operating stand-alone (without a case or Platform Integration Kit). Tactical Serves will fulfill an AAO increase. Increase of \$18.677M from FY18 to FY19 reflects funding aligned with procurement plan and refresh schedule for Increment I. Fluctuations in cost from year to year is caused by different components being refreshed prioritized based on obsolescence, operational user input and required capability upgrades against advanced target sets. Terrestrial Collection: \$6.442M supports the procurement of Advanced Network upgrade kits for fielded G-BOSS systems to increase network and computing performance for systems currently fielded in support of combat operations directly resulting in increased ability to conduct force protection and intelligence collections functions. Additionally, funds provide for the continued procurement of TRSS Common Sensor Radio (CSR) and hardware components toward a full networking capability to form wireless networks across multiple CSRs. Funds also support the procurement of MSIDS imagery transmission components providing the MAGTF commander the ability to transmit video and still imagery from eyes-on-target ashore in remote/austere locations from MSIDS outstation terminal to the Command Operations Center (COC) to support intelligence imagery gathering requirements. In FY19, GBOSS, MSIDS, and TRSS transition to Terrestrial Collection. G-BOSS: Funding changes after FY18 to reflect the transition of Ground Based Operational Surveillance (GBOSS) to Terrestrial Collection. MSIDS: Funding changes after FY18 to reflect the transition of MAGTF Secondary Imagery Dissemination System (MSIDS) to Terrestrial Collection. TRSS: Funding changes after FY18 to reflect the transition of Tactical Remote Sensor System (TRSS) to Terrestrial Collection. FY 2020 Base Appropriation Request: \$56.896M (\$56.896M Active; \$0.000M Reserve) The FY 2020 funding request was reduced by \$4.520M to account for the availability of prior year execution balances. The FY 2020 decrease of \$11.552M is primarily due to the realignment of IAS and TCAC resources to LI 4767 Distributed Common Ground System (DCGS-MC). CESAS: \$5.187M initiates procurement of Joint Light Tactical Vehicle (JLTV) Platform Integration Kit (PIK) components, completes Constructive Electromagnetic Operational Environment System (CEMOES) and provides initial support. These procurements will provide required ground mobile electronic attack capability and a unit-employable capability that replicates a radio frequency portion of the electromagnetic operating environment at training ranges to meet planned production schedule. Decrease of \$0.369M from FY19 to FY20 aligns funding to procurement schedule for CESAS II. CIHEP: \$12.974M will procure and field essential equipment for Technical Surveillance Countermeasures (TSCM) suites and the Data Processing Module (DPM) suites. The DPM is the core of the CIHEP Family of Systems (FoS), providing laptops, peripherals, and other basic surveillance equipment to enable CI/HUMINT operations. DPM software allows for reporting, analysis, data management, and mapping, as well as the tools to leverage the enhanced intelligence collection and dissemination capabilities provided by the other CIHEP FoS modules. Increase of \$6.908M from FY19 to FY20 reflects technical refresh and the procurement of mission critical TSCM suites as well as the modernization of DPM suites. IAS: Beginning FY20, IAS transitions to BLI 4767, Distributed Common Ground/Surface System-Marine Corps (DCGS-MC) in the support of the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE) Plan. IBR: \$3.014M will procure Embedded National Tactical Receiver (ENTR) Version 4 systems, components, and support. These systems, supporting eight (8) battalions, will be fielded to the company-level, and provide the capability of strategic, theater and tactical sensor-to-shooter intelligence data to the tactical edge of the battlefield. Decrease of \$0.458M from FY19 to FY20 is in alignment with procurement plan for various host systems. JWICS: \$6.861M will procure garrison and tactical equipment and integration costs for SCI Enterprise Office (SEO) and the Marine Corps Intelligence, Surveillance and Reconnaissance Enterprise (MCISRE) Fixed Site located at the Intelligence Enterprise Management Office (IEMO). Funding will procure garrison hardware such as desktops, thin clients, laptops, hyper-converged servers, routers, switches,		

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Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206625M, 0305208M
Line Item MDAP/MAIS Code: N/A		
maintenance of equipment, and technical refreshes of hardware, Electronic Key Management System (EKMS) for SEO services and Storage Area Network (SAN/NAS) to include the Tactical JWICS planned fielding of High Bandwidth Special Intelligence-Palletized Terminal (HBSI-PT) sites and Sensitive Compartmented Information Communications Kit (SCIK)s. Reduction to the JWICS program constricts access to National intelligence data, services and assets in support of current and future operations of the Marine Corps Leaders. Reduction puts the primary conduit for national-to-tactical SCI integration, network operations, specialized capabilities, remote production, exploitation, and dissemination across all intelligence domains at risk. Increase of \$2.247M from FY19 to FY20 reflects Tactical JWICS meeting planned fielding requirements. TSCS: \$17.104M will procure TSCS FoS Increment 2, which consists of the TSCS Modular (Mods) Case, MV-22 Aviation Platform Kits and the initial procurement of the Advanced Signals Processor (ASP). The TSCS Mods Case, replacing the TPCS Mods Case, will be fielded with blank sleeves, facilitating the insertion of the Core Receivers and Tactical Servers fielded in Increment 1, as well as the ASP, which replaces the TPCS Advanced Case. Fluctuations in cost from year to year is caused by different components being refreshed prioritized based on obsolescence, operational user input and required capability upgrades against advanced target sets. Decrease of \$6.069 from FY19 to FY20 reflects a change in the procurement plan and refresh schedule for Increment 2. Terrestrial Collection: \$6.643M will continue to support the procurement of Advanced Network upgrade kits for fielded G-BOSS systems to increase network and computing performance for systems currently fielded in support of combat operations directly resulting in increased ability to conduct force protection and intelligence collections functions. Funds also provide for the continued procurement of TRSS Common Sensor Radio (CSR) and hardware components toward a full networking capability to form wireless networks. Increase of \$0.201M from FY19 to FY20 reflects procurement plan of components within Terrestrial Collection. SCI COMMS: \$5.114M will procure items such as, (3) HBSI-PT systems to support AAO increase, and modems for HBSI-PT and SCIK systems to modernize the Family of Systems with new Enterprise SATCOM Gateway Modem (ESGM) technologies, which will be the future infrastructure standard, and program support. Decrease of \$2.21M from FY19 to FY20 reflects completion of the SpecA, and monitor and control device procurements for the HBSI-PT systems.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16									P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment							Aggregated Items Title: Intelligence Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Intelligence Analysis System (IAS) (122398) - Hardware																					
1.1) Command System, Tactical Tier I (MEF IAS)	A		-	-	-	-	-	-	-	-	4.748	-	-	-	-	-	-	-	-	-	
1.2) Command System, Tactical Tier II	A		-	-	-	-	-	-	-	-	2.398	-	-	-	-	-	-	-	-	-	
1.3) Command System, Tactical Tier III ^(†)	A		4,530.02	2,715	12.299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.4) Command System, Tactical Tier II (Reserve)	A		-	-	-	-	-	-	-	-	0.400	-	-	-	-	-	-	-	-	-	
Subtotal: 1) Intelligence Analysis System (IAS) (122398) - Hardware			-	-	12.299	-	-	-	-	-	7.546	-	-	-	-	-	-	-	-	-	
2) Intelligence Analysis System (IAS) (122398) - Software																					
2.1) Software Enhancement (Reserve)	A		-	-	-	-	-	0.741	-	-	-	-	-	-	-	-	-	-	-	-	
2.2) Software Enhancement	A		-	-	22.143	-	-	10.154	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 2) Intelligence Analysis System (IAS) (122398) - Software			-	-	22.143	-	-	10.895	-	-	-	-	-	-	-	-	-	-	-	-	
3) Intelligence Analysis System (IAS) (122398) - Support																					
3.1) Fielding Support			-	-	7.759	-	-	0.898	-	-	0.563	-	-	-	-	-	-	-	-	-	
3.2) Program Technical Support			-	-	23.628	-	-	1.486	-	-	1.327	-	-	-	-	-	-	-	-	-	
3.3) Program Technical Support (Reserves)	A		-	-	0.775	-	-	0.265	-	-	0.134	-	-	-	-	-	-	-	-	-	
Subtotal: 3) Intelligence Analysis System (IAS) (122398) - Support			-	-	32.162	-	-	2.649	-	-	2.024	-	-	-	-	-	-	-	-	-	
4) Intelligence Broadcast Receiver (IBR) (122700) - Hardware																					
4.1) IBR ENTR Version 4 ^{(1)(†)}	A		38,000.00	10	0.380	38,000.00	100	3.800	31,620.00	52	1.644	32,252.00	68	2.193	-	-	-	32,252.00	68	2.193	
4.2) IBR ENTR Version 4 Components and Accessories	A		-	-	0.140	-	-	1.105	-	-	0.878	-	-	0.298	-	-	-	-	-	0.298	
Subtotal: 4) Intelligence Broadcast Receiver (IBR) (122700) - Hardware			-	-	0.520	-	-	4.905	-	-	2.522	-	-	2.491	-	-	-	-	-	2.491	
5) Intelligence Broadcast Receiver (IBR) (122700) - Software																					
5.1) Software	A		-	-	-	-	-	0.040	-	-	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16						P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment						Aggregated Items Title: Intelligence Support Equipment								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 5) Intelligence Broadcast Receiver (IBR) (122700) - Software			-	-	0.000	-	-	0.040	-	-	-	-	-	-	-	-	-	-	-	-
6) Intelligence Broadcast Receiver (IBR) (122700) - Support																				
6.1) Program Support IBR (2)			-	-	4.176	-	-	1.095	-	-	0.950	-	-	0.523	-	-	-	-	-	0.523
Subtotal: 6) Intelligence Broadcast Receiver (IBR) (122700) - Support			-	-	4.176	-	-	1.095	-	-	0.950	-	-	0.523	-	-	-	-	-	0.523
7) Technical Control and Analysis Center (TCAC) (120698) - Hardware																				
7.1) RAWs Hardware Refresh		A	-	-	4.084	-	-	-	-	-	4.672	-	-	-	-	-	-	-	-	-
7.2) Cross Domain Solution (CDS)		A	-	-	3.409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.3) Peripherals/ Printers/Monitor Refresh		A	15,708.33	72	1.131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) Technical Control and Analysis Center (TCAC) (120698) - Hardware			-	-	8.624	-	-	-	-	-	4.672	-	-	-	-	-	-	-	-	-
8) Technical Control and Analysis Center (TCAC) (120698) - Support																				
8.1) Contractor Engineering, Tech and Mgmt Support			-	-	19.419	-	-	3.000	-	-	1.000	-	-	-	-	-	-	-	-	-
Subtotal: 8) Technical Control and Analysis Center (TCAC) (120698) - Support			-	-	19.419	-	-	3.000	-	-	1.000	-	-	-	-	-	-	-	-	-
9) Technical Control and Analysis Center (TCAC) (120698) - Software																				
9.1) RAWs, CDS, TWS SW Fielding		A	-	-	3.861	-	-	1.581	-	-	1.077	-	-	-	-	-	-	-	-	-
Subtotal: 9) Technical Control and Analysis Center (TCAC) (120698) - Software			-	-	3.861	-	-	1.581	-	-	1.077	-	-	-	-	-	-	-	-	-
10) Sensitive Compartmented Information Communications (SCI COMMS) (120398) - Hardware																				
10.1) HBSI-PT(†)		A	344,692.31	52	17.924	-	-	-	347,154.00	9	3.124	347,154.00	3	1.041	-	-	-	347,154.00	3	1.041
10.2) Crypto for HBSI-PT & SCIK & Coalition		A	-	-	0.440	-	-	0.124	-	-	0.305	-	-	-	-	-	-	-	-	-
10.3) Modification Kits & Upgrades (3)		A	-	-	-	-	-	0.251	-	-	0.609	-	-	3.695	-	-	-	-	-	3.695
10.4) Network Package Refresh (HBSI-PT & SCIK)		A	-	-	1.687	-	-	2.485	-	-	-	-	-	-	-	-	-	-	-	-
10.5) Coalition Network Packages		A	-	-	-	-	-	0.481	-	-	-	-	-	-	-	-	-	-	-	-
10.8) SCIK X-Band Kits		A	-	-	-	-	-	2.320	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16								P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment							Aggregated Items Title: Intelligence Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
10.9) HBSI-PT Ancillary Components (4)	A		-	-	-	-	-	-	-	-	1.705	-	-	-	-	-	-	-	-	-
Subtotal: 10) Sensitive Compartmented Information Communications (SCI COMMS) (120398) - Hardware			-	-	20.051	-	-	5.661	-	-	5.743	-	-	4.736	-	-	-	-	-	4.736
11) SCI COMMS (120398) - Support																				
11.1) Fielding and Initial Support (5)			-	-	2.330	-	-	0.741	-	-	1.582	-	-	0.378	-	-	-	-	-	0.378
Subtotal: 11) SCI COMMS (120398) - Support			-	-	2.330	-	-	0.741	-	-	1.582	-	-	0.378	-	-	-	-	-	0.378
12) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Hardware																				
12.1) Ground Electronic Attack System (6)(f)	A		1,081K	7	7.570	635,000.00	4	2.540	-	-	-	-	-	-	-	-	-	-	-	-
12.2) Component Parts for Ground Electronic Attack System - Man-Packable	A		-	-	-	-	-	1.635	-	-	-	-	-	-	-	-	-	-	-	-
12.3) Ground Electronic Attack System - Man-Packable (f)	A		-	-	-	-	-	-	213,474.00	19	4.056	-	-	-	-	-	-	-	-	-
12.4) Component Parts for JLTV PIKs	A		-	-	-	-	-	-	-	-	-	-	-	1.472	-	-	-	-	-	1.472
12.5) Constructive Electromagnetic Operational Environment System (CEMOES) (7)	A		-	-	-	-	-	0.469	-	-	-	-	-	2.600	-	-	-	-	-	2.600
Subtotal: 12) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Hardware			-	-	7.570	-	-	4.644	-	-	4.056	-	-	4.072	-	-	-	-	-	4.072
13) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Support																				
13.1) Program Support			-	-	0.929	-	-	0.585	-	-	-	-	-	-	-	-	-	-	-	-
13.2) Fielding, Initial & Production Support			-	-	1.067	-	-	1.515	-	-	1.500	-	-	1.115	-	-	-	-	-	1.115
Subtotal: 13) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Support			-	-	1.996	-	-	2.100	-	-	1.500	-	-	1.115	-	-	-	-	-	1.115
14) Counter Intelligence and Human Intelligence (CI/HUMINT) Equip. Program (CIHEP) (122698) - H																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16							P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment								Aggregated Items Title: Intelligence Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
14.1) CIHEP Data Processing Module (DPM) Components	A		-	-	2.279	-	-	-	-	-	-	-	-	5.488	-	-	-	-	-	5.488
14.2) CIHEP Technical Surveillance Countermeasures Equipment Components	A		-	-	2.495	-	-	2.400	-	-	4.800	-	-	7.486	-	-	-	-	-	7.486
14.4) CIHEP Technical Surveillance Module (TSM)	A		61,384.62	13	0.798	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.5) CIHEP MEDEX-Light	A		39,101.45	69	2.698	-	-	-	-	-	0.825	-	-	-	-	-	-	-	-	-
14.6) CIHEP Commercial Satellite Communication Set (CSCS) Components	A		-	-	0.200	-	-	0.592	-	-	-	-	-	-	-	-	-	-	-	-
14.9) CIHEP Broadband Global Area Network Antenna	A		-	-	-	-	-	0.533	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 14) Counter Intelligence and Human Intelligence (CI/HUMINT) Equip. Program (CIHEP) (122698) - H			-	-	8.470	-	-	3.525	-	-	5.625	-	-	12.974	-	-	-	-	-	12.974
15) Counter Intelligence and Human Intelligence (CI/HUMINT) Equip. Program (CIHEP) (122698)- S																				
15.1) Software	A		-	-	0.378	-	-	-	-	-	0.441	-	-	-	-	-	-	-	-	-
Subtotal: 15) Counter Intelligence and Human Intelligence (CI/HUMINT) Equip. Program (CIHEP) (122698)- S			-	-	0.378	-	-	-	-	-	0.441	-	-	-	-	-	-	-	-	-
16) Counter Intelligence and Human Intelligence (CI/HUMINT) Equip. Program (CIHEP) (122698) - S																				
16.1) CIHEP Technical/Logistics Support			-	-	5.358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 16) Counter Intelligence and Human Intelligence (CI/HUMINT) Equip. Program (CIHEP) (122698) - S			-	-	5.358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17) JWICS (120206) - Hardware																				
17.1) Servers, Storage and Network equipment	A		1,693K	6	10.156	-	-	1.601	-	-	2.388	-	-	4.138	-	-	-	-	-	4.138
17.2) JPED - Servers, Storage and Network Equipment	A		-	-	12.500	-	-	1.800	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 17) JWICS (120206) - Hardware			-	-	22.656	-	-	3.401	-	-	2.388	-	-	4.138	-	-	-	-	-	4.138
18) JWICS (120206) - Software																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16								P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment								Aggregated Items Title: Intelligence Support Equipment				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
18.1) JPED - Software	A		-	-	3.190	-	-	0.600	-	-	-	-	-	-	-	-	-	-	-	-
18.2) Software	A		-	-	15.361	-	-	1.632	-	-	-	-	-	0.132	-	-	-	-	-	0.132
Subtotal: 18) JWICS (120206) - Software			-	-	18.551	-	-	2.232	-	-	-	-	-	0.132	-	-	-	-	-	0.132
19) JWICS (120206) - Support																				
19.1) Hardware & Software Integration			-	-	11.189	-	-	0.865	-	-	2.227	-	-	2.591	-	-	-	-	-	2.591
19.2) JPED - Hardware & Software Integration			-	-	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 19) JWICS (120206) - Support			-	-	12.189	-	-	0.865	-	-	2.227	-	-	2.591	-	-	-	-	-	2.591
20) Tactical SIGINT Collection System (TSCS) (120514) - Hardware																				
20.1) TPCS Mods Block 0 - Workstation	A		494,000.00	3	1.482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.2) TPCS Modular Case - Combat Equipment Replacement ^(†)	A		100,000.00	1	0.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.3) TPCS Special Purpose Receiver Refresh ^(†)	A		81,482.76	29	2.363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.4) RREP Special Purpose Receiver Refresh	A		81,761.90	42	3.434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.5) TPCS Server Sleeves ^(†)	A		100,000.00	69	6.900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6) TPCS Legacy Signals of Interest	A		-	-	-	-	-	2.022	-	-	-	-	-	-	-	-	-	-	-	-
20.7) TPCS Locate Case ^(†)	A		84,000.00	1	0.084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8) TPCS Wide Band Receiver ^(†)	A		49,000.00	1	0.049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.9) TSCS DNI Carrier ^(†)	A		109,000.00	1	0.109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.10) TSCS Increment 1 (see footnote) ⁽⁸⁾	A		-	-	-	-	-	-	-	-	22.744	-	-	-	-	-	-	-	-	-
20.11) TSCS Increment 2 (see footnote) ⁽⁹⁾	A		-	-	-	-	-	-	-	-	-	-	-	16.859	-	-	-	-	-	16.859

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16								P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment							Aggregated Items Title: Intelligence Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 20) Tactical SIGINT Collection System (TSCS) (120514) - Hardware			-	-	14.521	-	-	2.022	-	-	22.744	-	-	16.859	-	-	-	-	-	16.859
21) Tactical SIGINT Collection System (TSCS) (120514) - Support																				
21.1) Program Support			-	-	0.363	-	-	0.150	-	-	0.103	-	-	-	-	-	-	-	-	-
21.2) Fielding and Initial Support			-	-	1.027	-	-	0.259	-	-	0.326	-	-	0.245	-	-	-	-	-	0.245
Subtotal: 21) Tactical SIGINT Collection System (TSCS) (120514) - Support			-	-	1.390	-	-	0.409	-	-	0.429	-	-	0.245	-	-	-	-	-	0.245
22) Ground Based Operational Surveillance (G-BOSS) (500308) - Hardware																				
22.1) Cameras, Radar, and Support Equipment ⁽¹⁰⁾		A	-	-	-	-	-	3.274	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 22) Ground Based Operational Surveillance (G-BOSS) (500308) - Hardware			-	-	0.000	-	-	3.274	-	-	-	-	-	-	-	-	-	-	-	-
23) MAGTF Secondary Imagery Dissemination System (MSIDS) - 122198 - Hardware ⁽¹¹⁾																				
23.1) MSIDS Imagery Transmission Components		A	-	-	2.942	-	-	0.112	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 23) MAGTF Secondary Imagery Dissemination System (MSIDS) - 122198 - Hardware			-	-	2.942	-	-	0.112	-	-	-	-	-	-	-	-	-	-	-	-
24) MAGTF Secondary Imagery Dissemination System (MSIDS) - 122198 - Support																				
24.1) MSIDS New Equipment Training and Fielding Support			-	-	-	-	-	0.949	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 24) MAGTF Secondary Imagery Dissemination System (MSIDS) - 122198 - Support			-	-	0.000	-	-	0.949	-	-	-	-	-	-	-	-	-	-	-	-
25) Tactical Remote Sensor System (TRSS) (121198) - Hardware ⁽¹²⁾																				
25.1) TRSS Components - Common Sensor Radio (CSR) ^(†)		A	-	-	-	2,500.00	1,000	2.500	-	-	-	-	-	-	-	-	-	-	-	-
25.2) TRSS Air Delivered Unattended Ground Sensors (ADUGS) Components		A	-	-	-	-	-	0.138	-	-	-	-	-	-	-	-	-	-	-	-
25.3) TRSS Hardware Components (various)		A	-	-	2.182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16							P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment								Aggregated Items Title: Intelligence Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 25) Tactical Remote Sensor System (TRSS) (121198) - Hardware			-	-	2.182	-	-	2.638	-	-	-	-	-	-	-	-	-	-	-	-
26) Tactical Remote Sensor System (TRSS) (121198) - Support																				
26.1) TRSS Program Support			-	-	0.202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 26) Tactical Remote Sensor System (TRSS) (121198) - Support			-	-	0.202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27) Terrestrial Collection (121019) - Hardware ⁽¹³⁾																				
27.1) GBOSS Advanced Network Components	A		-	-	-	-	-	-	-	-	1.826	-	-	2.100	-	-	-	-	-	2.100
27.2) MSIDS Imagery Transmission Components	A		-	-	-	-	-	-	-	-	1.558	-	-	0.100	-	-	-	-	-	0.100
27.3) TRSS Components - Common Sensor Radio (CSR) ^(†)	A		-	-	-	-	-	-	2,500.00	600	1.500	-	-	-	-	-	-	-	-	-
27.4) TRSS Hardware Components (Various)	A		-	-	-	-	-	-	-	-	1.558	-	-	4.442	-	-	-	-	-	4.442
Subtotal: 27) Terrestrial Collection (121019) - Hardware			-	-	0.000	-	-	-	-	-	6.442	-	-	6.642	-	-	-	-	-	6.642
28) Prior Years Cumulative Funding																				
28.1) Prior Years Cumulative Funding	A		-	-	319.635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 28) Prior Years Cumulative Funding			-	-	319.635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	543.625	-	-	56.738	-	-	72.968	-	-	56.896	-	-	-	-	-	56.896
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(†) indicates the presence of a P-5a																				
Footnotes:																				
⁽¹⁾ IBR: FY17-FY18 unit cost updated to current contract volume discounted price.																				
⁽²⁾ IBR: FY18 Program Support updated to current plan.																				
⁽³⁾ SCI COMMS Modification Kits & Upgrades: Increase from FY19 to FY20 support procurement of items such as X-band upgrades for SCIK and modems for HBSI-PT and SCIK systems at various unit costs and quantities.																				
⁽⁴⁾ SCI COMMS HBSI-PT Ancillary Components: Funding support procurement of components such as modems, power supply and field boresight kits at various unit costs and quantities.																				
⁽⁵⁾ SCI COMMS Fielding & Initial Support: FY19 to FY20 decrease of \$1.204M reflects completion of HBSI-PT and SCIK fielding events to the MEFs.																				
⁽⁶⁾ CESAS: Due to receipt of 17RAA funding for acceleration of CESAS II procurement, Approved Acquisition Objective (AAO) completes with final qty of 4 in FY18 vice qty 8 in FY18.																				
⁽⁷⁾ CESAS: Constructive Electromagnetic Operational Environment System (CEMOES) was formerly named Electromagnetic Spectrum Operations Range (EMSOR)																				
⁽⁸⁾ TSCS: In FY19, TSCS FoS will procure Increment 1 which includes Core Receivers and Tactical Servers.																				
⁽⁹⁾ TSCS: In FY20, TSCS FoS will procure Increment 2 which includes TSCS Modular Cases, MV-22 Aviation Platform Integration Kits and the initial procurement of Advanced Signals Processors.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16	P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment	Aggregated Items Title: Intelligence Support Equipment
(10) G-BOSS: Funding changes after FY18 reflect the transition of Ground Based Operational Surveillance (GBOSS) to Terrestrial Collection. (11) MSIDS: Funding changes after FY18 reflect the transition of MAGTF Secondary Imagery Dissemination System (MSIDS) - 122198 to Terrestrial Collection - 121019. (12) TRSS: Funding changes after FY18 reflect the transition of Tactical Remote Sensor System (TRSS) - 121198 to Terrestrial Collection - 121019. (13) Terrestrial Collection: In FY19, GBOSS, MSIDS, and TRSS transition to Terrestrial Collection.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16				P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment					Aggregated Items: Intelligence Support Equipment			
Item Number / Title [DODIC]	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) Intelligence Analysis System (IAS) (122398) - Hardware												
1.3) Command System, Tactical Tier III ^(†)		2017	SPAWAR / Charleston, SC	C / FFP	Charleston SC	Aug 2017	Aug 2018	2,715	1,781.95	Y		Oct 2016
4) Intelligence Broadcast Receiver (IBR) (122700) - Hardware												
4.1) IBR ENTR Version 4 ⁽¹⁾		2018	Army Special Projects Office / Alexandria, VA	MIPR	Alexandria	Dec 2017	Mar 2019	100	38,000.00	Y		Oct 2017
4.1) IBR ENTR Version 4 ⁽¹⁾		2019	Army Special Projects Office / Alexandria, VA	MIPR	Alexandria	Dec 2018	Mar 2020	52	31,620.00	Y		Oct 2018
4.1) IBR ENTR Version 4 ⁽¹⁾		2020	Army Special Projects Office / Alexandria, VA	MIPR	Alexandria	Dec 2019	Mar 2021	68	32,252.00	Y		Oct 2019
10) Sensitive Compartmented Information Communications (SCI COMMS) (120398) - Hardware												
10.1) HBSI-PT	✓	2017	GATR Technologies / Huntsville, AL	C / FFP	CECOM, Aberdeen, MD	Sep 2017	Mar 2018	2	347,154.00	Y		
10.1) HBSI-PT		2019	GATR Technologies / Huntsville, AL	C / FFP	CECOM, Aberdeen, MD	Sep 2019	Mar 2020	9	347,154.00	Y		
10.1) HBSI-PT		2020	GATR Technologies / Huntsville, AL	C / FFP	CECOM, Aberdeen, MD	Jun 2020	Dec 2020	3	347,154.00	Y		
12) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Hardware												
12.1) Ground Electronic Attack System ^{(6)(†)}		2018	SPAWAR Charleston / Charleston, SC	C / FFP	Charleston, SC	Dec 2017	Jul 2018	4	635,000.00	Y		Aug 2017
12.3) Ground Electronic Attack System - Man-Packable ^(†)		2019	SPAWAR Charleston / Charleston, SC	C / FFP	Charleston, SC	Sep 2019	Mar 2020	19	213,474.00	Y		Feb 2019
20) Tactical SIGINT Collection System (TSCS) (120514) - Hardware												
20.2) TPCS Modular Case - Combat Equipment Replacement	✓	2017	SPAWAR @Charleston, SC / Charleston, SC	C / FFP	Charleston SC	Apr 2017	Oct 2017	1	100,000.00	Y		Nov 2016
20.3) TPCS Special Purpose Receiver Refresh	✓	2017	SPAWAR @Charleston, SC / Charleston, SC	C / FFP	Charleston SC	Apr 2017	Sep 2017	2	81,477.52	Y		Nov 2016
20.5) TPCS Server Sleeves	✓	2017	SPAWAR @Charleston, SC / Charleston, SC	C / FFP	Charleston SC	Jun 2017	Nov 2017	44	100,000.00	Y		Nov 2016
20.7) TPCS Locate Case	✓	2017	SPAWAR @Charleston, SC / Charleston, SC	C / FFP	Charleston SC	Jan 2017	Jul 2017	1	84,000.00	Y		Jan 2017
20.8) TPCS Wide Band Receiver	✓	2017	SPAWAR @Charleston, SC / Charleston, SC	C / FFP	Charleston SC	Feb 2017	Aug 2017	1	49,000.00	Y		Jan 2017
20.9) TSCS DNI Carrier	✓	2017	SPAWAR @Charleston, SC / Charleston, SC	C / FFP	Charleston SC	Feb 2017	Aug 2017	1	109,000.00	Y		Jan 2017
25) Tactical Remote Sensor System (TRSS) (121198) - Hardware												
25.1) TRSS Components - Common Sensor Radio (CSR)		2018	Army Research Lab / Adelphi, MD	C / FFP	Adelphi, MD	Sep 2018	Dec 2018	1,000	2,500.00	Y		Mar 2018
27) Terrestrial Collection (121019) - Hardware												

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16				P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment				Aggregated Items: Intelligence Support Equipment				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
27.3) TRSS Components - Common Sensor Radio (CSR)		2019	TBD / TBD	C / FFP	TBD	Jun 2019	Sep 2019	600	2,500.00	Y		Mar 2018

(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16										P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment													Aggregated Items: Intelligence Support Equipment								
Items <i>(Units in Each)</i>							Fiscal Year 2017												Fiscal Year 2018												BALANCE
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1) Intelligence Analysis System (IAS) (122398) - Hardware																															
1.3) Command System, Tactical Tier III																															
	18	2017	NAVY		2,715	0	2,715											A -	-	-	-	-	-	-	-	-	-	-	453	453	1,809
12) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Hardware																															
12.1) Ground Electronic Attack System ⁽⁶⁾																															
Prior Years Deliveries: 7																															
	19	2018	NAVY		4	0	4											A -	-	-	-	-	-	-	-	-	-	3	1		0
12.3) Ground Electronic Attack System - Man-Packable																															
	20	2019	NAVY		19	0	19																								19
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

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Exhibit P-21, Production Schedule: PB 2020 Navy																					Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16										P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment											Aggregated Items: Intelligence Support Equipment													
Items <i>(Units in Each)</i>							Fiscal Year 2019											Fiscal Year 2020											BALANCE					
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019											Calendar Year 2020																
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL		AUG	SEP			
1) Intelligence Analysis System (IAS) (122398) - Hardware																																		
1.3) Command System, Tactical Tier III																																		
	18	2017	NAVY		2,715	906	1,809	453	453	453	450																					0		
12) Communication Emitter Sensing and Attacking System (CESAS) (360204) - Hardware																																		
12.1) Ground Electronic Attack System ⁽⁶⁾																																		
Prior Years Deliveries: 7																																		
	19	2018	NAVY		4	4	0																										0	
12.3) Ground Electronic Attack System - Man-Packable																																		
	20	2019	NAVY		19	0	19												A -	-	-	-	-	-	9	10								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16					P-1 Line Item Number / Title: 4747 / Intelligence Support Equipment				Aggregated Items: Intelligence Support Equipment			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	SPAWAR - Charleston, SC			TBD	0	0	6	6	0	0	0	0
2	SPAWAR Charleston - Charleston, SC		8	15	0	0	7	7	0	0	7	7
3	SPAWAR Charleston - Charleston, SC			19	0	0	6	6	0	0	6	6

"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: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)	P-1 Line Item Number / Title: 4757 / Unmanned Air Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305232M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	116.093	10.154	3.848	34.711	0.000	34.711	39.845	30.623	18.449	19.353	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	116.093	10.154	3.848	34.711	0.000	34.711	39.845	30.623	18.449	19.353	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	116.093	10.154	3.848	34.711	0.000	34.711	39.845	30.623	18.449	19.353	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Small Unit Remote Scouting System (SURSS) - The SURSS program procures unmanned aircraft systems (UAS) to provide battalion/company/detachment level units with scalable airborne Intelligence, Surveillance and Reconnaissance (ISR) capabilities to aid in detecting, identifying, engaging, and/or avoiding enemy units. Currently procured RQ-12 Wasp, RQ-11 Raven, RQ-20 Puma and various Nano/ Vertical Takeoff & Landing (VTOL) UASs meet validated operational requirements delineated in the Operational Requirements Document (ORD). They continue to be planned as the current solutions for Group 1 and Group 2 capability needs while both Navy and Marine Corps finalize the transition of revised requirements to address Intelligence, Surveillance, and Reconnaissance (ISR) Capability Set via a new Capability Development Document (CDD), the intended successor to the current ORD. The new CDD shall incorporate unique mission kits, mission payloads, air vehicle enhancements, and modifications of UAS and related ground control stations for the family of Group 1 tactical UAS systems including Group 1 Short Range/Short Endurance (SR/SE), Group 1 Medium Range/Medium Endurance (MR/ME), and Group1/Group 2 Long Range/Long Endurance (LR/LE). Group 1 UAS are small systems, less than 20 pounds in weight and Group 2 are medium systems, between 21 pounds and 55 pounds in weight. The SURSS program also conducts Field User Evaluations (FUEs) to support Universal Urgent Needs Statements (UUNS) that inform future USMC system procurement the most current technology available. A Single Operator Man-Portable Ground Control System (GCS) / Target Handoff System (SOMGCS/THS) capability provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. A SOMGCS/THS capability reduces the size, weight, and manpower required to operate a SURSS GCS, increases the mobility of the operator, and improves digital interoperability. A SOMGCS/THS capability shall be fully mobile and can be attached to the operator while the fielded GCS requires setup at a static location.

SR/SE capabilities are transitioning with revised requirements vice the existing ORD (Block 0) requirements to a next generation capability: Existing ORD (Block 0) capabilities are satisfied by the RQ-12A Wasp UAS. Wasp is a small, all environment UAS with a wingspan of 3.3 feet weight of 2.25 pounds and endurance of 60 minutes. The payload consists of a gimbale turret with Electro Optical/Infrared (EO/IR) sensor. It allows maximum portability and provides near-real-time reconnaissance required by the platoon and rifle squad. SR/SE (ORD Block 0) assets reduce the request-to-response timeframe for ISR services by eliminating delays or denials for ISR coverage due to an imbalance of other UAS assets that might otherwise be available.

MR/ME capabilities are transitioning with revised requirements vice the existing ORD (Block 1) requirements to a next generation capability: Existing ORD (Block 1) capabilities are satisfied by the RQ-11B Raven UAS. Raven is a small UAS with a wingspan of 4.6 feet, weight of 5 pounds and endurance of 90 minutes. Raven employs a gimbale EO/IR sensor. Raven provides the company level unit an organic, near-real-time ISR capability that facilitates rapid battlefield decision making.

LR/LE capabilities are transitioning with revised requirements vice the existing ORD (Block 2) requirements to a next generation capability: Existing ORD (Block 2) capabilities are satisfied by the RQ-20B Puma UAS. Puma is an all environment UAS with a wingspan of 9.2 feet, weight of 13 pounds and endurance of 2.5 hours. The Puma has demonstrated ranges of up to 28 kilometers. The standard payload consists

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4757 / Unmanned Air Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305232M
Line Item MDAP/MAIS Code: N/A		
of a gimbaled turret with an EO/IR sensor; a Signals Intelligence payload is also available. Puma provides an organic, persistent ISR capability to battalion level units, Route Clearance Platoons (RCP) and Combat Logistics Patrols (CLP) to enhance force protection and detect Improvised Explosive Devices (IEDs).		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)						P-1 Line Item Number / Title: 4757 / Unmanned Air Systems				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0305232M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / RQ-11 UAV	P-5a, P-21			- / 116.093	- / 10.154	- / 3.848	- / 34.711	- / 0.000	- / 34.711
P-40	Total Gross/Weapon System Cost				- / 116.093	- / 10.154	- / 3.848	- / 34.711	- / 0.000	- / 34.711
*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 Base Appropriation Request: \$10.154M \$6.605M procured RQ-20B Puma systems with improved system configuration and technical capabilities \$0.529M procured Single Operator Man-Portable Ground Control Stations, also known as Target Handoff Systems (THS). \$3.020M procured Laser Markers. FY 2019 Base Appropriation Request: \$3.848M \$2.895M procures NextGen Short Range/Short Endurance (SR/SE) Systems \$0.503M procures Single Operator Man Portable Ground Control Station (SOMGCS/THS) \$0.450M procures Laser markers FY2020 Base Appropriation Request: \$34.711M \$7.004M will procure NextGen SR/SE Systems. The VTOL SR/SE UAS will provide dispersed Marine Corps units (Companies, Platoons, and Squads) an organic capability to operate in combat zones with significant vertical obstructions such as urban, jungle, and rugged terrains. Quantities are notional and unit cost is an average across many VTOL variants/configurations. Actual quantities of each UAS type/model/series will be determined in the execution year based on fleet need. \$12.943M will procure defined SR/SE capabilities. Short Range/Short Endurance (SR/SE) was formally called RQ-12 WASP. Due to rapid changes in technologies we changed the names to capabilities instead of platforms. The SR/SE capability solution set will include VTOL starting in FY20. \$13.896M will procure Long Range/Long Endurance (LR/LE) capabilities. Long Range/Long Endurance (LR/LE) was formally called RQ-20 PUMA. Due to rapid changes in technologies we changed the names to capabilities instead of platforms. FY20 increase in unit cost of Long Range/Long Endurance RQ-20B (LR/LE) Puma is due to a new configuration that includes the I45 camera/sensor and other platform enhancements. \$0.868M will procure SOMGCS/THS. The Single Operator Man-Portable Ground Control System/Target Handoff System (SOMGCS/THS) provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. SOMGCS/THS reduces the size, weight, and man power required to operate a SURSS GCS, increases the mobility of the operator, and improves digital interoperability. SOMGCS/THS is fully mobile and can be attached to the operator while the fielded GCS requires setup at a static location. Unit Cost decreases from FY19 to FY20 due to economies of scale economics. The funding increase of \$30.863M and quantity increase of 195 UAS from FY19 to FY20 is due to the revision of SURSS Approved Acquisition Objective as delineated in HQMC Capabilities Development Directorate letter 5311 C10 dated 10 January 2018, in support of the USMC Force 2025 strategy document and the Marine Corps Capabilities Based Assessment (MC CBA). This identifies and refines Marine Corps capabilities, capability gaps and overlaps/redundancies, and risks within the Future Years Defense Program (FYDP) pertaining to the Program Objective memorandum (POM) year of analysis.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16						P-1 Line Item Number / Title: 4757 / Unmanned Air Systems							Item Number / Title [DODIC]: 1 / RQ-11 UAV								
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:												
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				116.093			10.154			3.848			34.711			0.000			34.711		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				116.093			10.154			3.848			34.711			0.000			34.711		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				116.093			10.154			3.848			34.711			0.000			34.711		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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 - RQ-11 UAV Cost																					
Recurring Cost																					
1.1.1) Long Range/ Long Endurance (LR/ LE) ^{(†) (1)}		883,461.54	26	22.970	254,038.50	26	6.605	-	-	-	330,857.14	42	13.896	-	-	-	330,857.14	42	13.896		
1.1.2) Short Range/ Short Endurance (SR/ SE) ^{(†) (2)}		123,100.00	10	1.231	-	-	-	-	-	-	323,575.00	40	12.943	-	-	-	323,575.00	40	12.943		
1.1.3) Vertical Takeoff and Landing (VTOL) System ^{(†) (3)}		-	-	-	-	-	-	28,950.00	100	2.895	36,863.16	190	7.004	-	-	-	36,863.16	190	7.004		
1.1.4) Single Operator Man Portable Ground Control Station (SOMGCS/THS) ^{(†) (4)}		15,983.33	60	0.959	17,064.52	31	0.529	18,629.63	27	0.503	17,360.00	50	0.868	-	-	-	17,360.00	50	0.868		
1.1.5) PUMA SIGINT Payloads ^(†)		74,250.00	4	0.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1.1.6) Laser Marker ^(†)		-	-	-	75,500.00	40	3.020	150,000.00	3	0.450	-	-	-	-	-	-	-	-	-		
1.1.7) WASP IV Components		-	-	3.185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1.1.8) PUMA Components		-	-	12.425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1.1.9) Prior Year Cumulative Funding		-	-	75.026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Subtotal: Recurring Cost		-	-	116.093	-	-	10.154	-	-	3.848	-	-	34.711	-	-	-	-	-	34.711		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16						P-1 Line Item Number / Title: 4757 / Unmanned Air Systems							Item Number / Title [DODIC]: 1 / RQ-11 UAV					
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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 - RQ-11 UAV Cost	-	-	116.093	-	-	10.154	-	-	3.848	-	-	34.711	-	-	-	-	-	34.711
Gross/Weapon System Cost	-	-	116.093	-	-	10.154	-	-	3.848	-	-	34.711	-	-	0.000	-	-	34.711

(t) indicates the presence of a P-5a

Footnotes:

- (1) Long Range/Long Endurance (LR/LE) was formally called RQ-20 PUMA. Due to rapid changes in technologies we changed the names to capabilities instead of platforms. FY20 increase in unit cost of Long Range/Long Endurance RQ-20B (LR/LE) Puma is due to a new configuration that includes the I45 camera/sensor and other platform enhancements.
- (2) Short Range/Short Endurance (SR/SE) was formally called RQ-12 WASP. Due to rapid changes in technologies we changed the names to capabilities instead of platforms. The SR/SE capability solution set will include VTOL starting in FY20.
- (3) The VTOL SR/SE UAS will provide dispersed Marine Corps units (Companies, Platoons, and Squads) an organic capability to operate in combat zones with significant vertical obstructions such as urban, jungle, and rugged terrains. Quantities are notional and unit cost is an average across many VTOL variants/configurations. Actual quantities of each UAS type/model/series will be determined in the execution year based on fleet need and a buy to budget methodology.
- (4) The Single Operator Man-Portable Ground Control System/Target Handoff System (SOMGCS/THS) provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. SOMGCS/THS reduces the size, weight, and man power required to operate a SURSS GCS, increases the mobility of the operator, and improves digital interoperability. SOMGCS/THS is fully mobile and can be attached to the operator while the fielded GCS requires setup at a static location. Unit Cost decreases from FY19 to FY20 due to economies of scale economics.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16				P-1 Line Item Number / Title: 4757 / Unmanned Air Systems				Item Number / Title [DODIC]: 1 / RQ-11 UAV				
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) Long Range/Long Endurance (LR/LE) ^(†)		2018	AeroVironment Inc. / Simi Valley, CA	C / IDDQ	DLA Troop Support, Philadlphia, PA	Feb 2018	Aug 2018	26	254,038.50	Y		Nov 2017
1.1.1) Long Range/Long Endurance (LR/LE) ^(†)		2020	AeroVironment Inc. / Simi Valley, CA	C / IDIQ	DLA Troop Support, Philadlphia, PA	Feb 2020	Aug 2020	42	330,857.14	Y		Nov 2019
1.1.2) Short Range/Short Endurance (SR/SE) ^(†)		2020	AeroVironment Inc. / Simi Valley, CA	SS / IDIQ	DLA Troop Support, Philadlphia, PA	Feb 2020	Jun 2020	40	323,575.00	Y		Nov 2019
1.1.3) Vertical Takeoff and Landing (VTOL) System ^(†)		2019	Physical Science Inc / Andover, MA	C / IDIQ	DLA Troop Support, Philadlphia, PA	Dec 2018	Feb 2019	100	28,950.00	Y		Nov 2018
1.1.3) Vertical Takeoff and Landing (VTOL) System ^(†)		2020	Various / Various	C / IDIQ	DLA Troop Support, Philadlphia, PA	Dec 2019	May 2020	190	36,863.16	Y		Nov 2019
1.1.4) Single Operator Man Portable Ground Control Station (SOMGCS/THS)		2017 ⁽⁵⁾	NAWC WD / China Lake, CA	WR	China Lake, CA	Mar 2017	Sep 2017	60	15,983.33	Y		Nov 2016
1.1.4) Single Operator Man Portable Ground Control Station (SOMGCS/THS)		2018	NAWC WD / China Lake, CA	WR	China Lake, CA	Mar 2018	Sep 2018	31	17,064.52	Y		Nov 2017
1.1.4) Single Operator Man Portable Ground Control Station (SOMGCS/THS)		2019	NAWC WD / China Lake, CA	WR	China Lake, CA	Oct 2018	Apr 2019	27	18,629.63	Y		Jun 2018
1.1.4) Single Operator Man Portable Ground Control Station (SOMGCS/THS)		2020	NAWC WD / China Lake, CA	WR	China Lake, CA	Mar 2020	Sep 2020	50	17,360.00	Y		Nov 2019
1.1.5) PUMA SIGINT Payloads	✓	2017	Lucent Government Systems / Florham Park, NJ	MIPR	AFRL, Dayton, OH	Feb 2017	Aug 2017	4	74,250.00	Y		Nov 2016
1.1.6) Laser Marker		2018	Controps / Israel	C / IDIQ	DLA Troop Support, Philadlphia, PA	Feb 2018	Aug 2018	40	75,500.00	Y		Sep 2017
1.1.6) Laser Marker		2019	Controps / Israel	C / TBD	DLA Troop Support, Philadlphia, PA	Mar 2019	Sep 2019	3	150,000.00	Y		Nov 2018

^(†) indicates the presence of a P-21

Footnotes:

⁽⁵⁾ Naval Air Warfare Center, Weapons Division acts as the system integrator. NAWC WD will procure COTS equipment from various vendors and integrate the hardware with the government developed SOMGCS software solution.

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16										P-1 Line Item Number / Title: 4757 / Unmanned Air Systems										Item Number / Title [DODIC]: 1 / RQ-11 UAV																						
Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE											
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT							Calendar Year 2017										Calendar Year 2018																			
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP												
1.1.1) Long Range/Long Endurance (LR/LE) ⁽¹⁾																																										
Prior Years Deliveries: 26																																										
	1	2018	NAVY	26	0	26													A -										-	-	-	-	-	-	26		0					
	1	2020	NAVY	42	0	42																																				42
1.1.2) Short Range/Short Endurance (SR/SE) ⁽²⁾																																										
Prior Years Deliveries: 10																																										
	2	2020	NAVY	40	0	40																																				40
1.1.3) Vertical Takeoff and Landing (VTOL) System ⁽³⁾																																										
	3	2019	NAVY	100	0	100																																				100
	4	2020	NAVY	190	0	190																																				190
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP												

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16										P-1 Line Item Number / Title: 4757 / Unmanned Air Systems										Item Number / Title [DODIC]: 1 / RQ-11 UAV														
Cost Elements (Units in Each)							Fiscal Year 2019										Fiscal Year 2020													BALANCE				
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019										Calendar Year 2020																	
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP			
1.1.1) Long Range/Long Endurance (LR/LE) ⁽¹⁾																																		
Prior Years Deliveries: 26																																		
	1	2018	NAVY	26	26	0																												0
	1	2020	NAVY	42	0	42																	A -	-	-	-	-	-	-	42		0		
1.1.2) Short Range/Short Endurance (SR/SE) ⁽²⁾																																		
Prior Years Deliveries: 10																																		
	2	2020	NAVY	40	0	40																	A -	-	-	-	-	40		0				
1.1.3) Vertical Takeoff and Landing (VTOL) System ⁽³⁾																																		
	3	2019	NAVY	100	0	100					A -	-	100																	0				
	4	2020	NAVY	190	0	190																A -	-	-	-	-	190					0		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16					P-1 Line Item Number / Title: 4757 / Unmanned Air Systems				Item Number / Title [DODIC]: 1 / RQ-11 UAV			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	AeroVironment Inc. - Simi Valley, CA	6	12	64	0	2	6	8	0	2	6	8
2	AeroVironment Inc. - Simi Valley, CA	6	12	64	1	3	4	7	0	0	6	6
3	Physical Science Inc - Andover, MA			200	2	0	2	2	0	0	0	0
4	Various - Various			TBD	2	0	5	5	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: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)							P-1 Line Item Number / Title: 4767 / Distributed Common Ground System (DCGS-MC)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0505208M, 0206625M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	59.990	12.883	16.081	32.562	0.000	32.562	34.427	27.623	29.173	32.165	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	59.990	12.883	16.081	32.562	0.000	32.562	34.427	27.623	29.173	32.165	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	59.990	12.883	16.081	32.562	0.000	32.562	34.427	27.623	29.173	32.165	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	0.166	-	0.166	0.169	0.172	0.176	0.180	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
This is a Military Intelligence Program (MIP) budget line item.

Distributed Common Ground/Surface System Marine Corps (DCGS-MC) is integral to delivering decision advantage at the speed of operational relevance outlined in the 2018 National Defense Strategy. In order to concentrate investments in an integrated architecture to improve enterprise alignment while delivering substantially better collective intelligence outcomes for the warfighter, our All-Source and SIGINT programs have been consolidated under the DCGS-MC portfolio. DCGS-MC provides an analysis and production capability within garrison and deployed Marine Corps organizations. DCGS-MC complies with the Department of Defense (DoD) DCGS Enterprise interoperability and information sharing requirements by migrating select processing, exploitation, analysis, and production capabilities into a single, integrated, net-centric baseline within the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE). This baseline will enable MCISRE analysts to deliver tactically focused, operational, and strategic intelligence at the tactical edge throughout all phases of operations and will provide relevant, precise decision support for Joint Task Force (JTF), Marine Air Ground Task Force (MAGTF), and subordinate Marine units. The DCGS-MC portfolio currently consists of enterprise services and functional analytic and production tools that provide analysts with the ability to process, disseminate, exploit, analyze, and produce intelligence for discovery via the DCGS Integration Backbone (DIB). The functional capabilities are grouped by DCGS-MC GEOINT, DCGS-MC All Source, and DCGS-MC SIGINT. Future capabilities will be delivered via clearly defined Capability Drops determined by an integrated assessment of user needs, technology readiness, risk mitigation, and affordability.

DCGS-MC Geospatial Intelligence (DCGS-MC GEOINT)

DCGS-MC GEOINT provides geo-referenced data and products that establish the GEOINT foundation for battlespace visualization and a common frame of reference to support the commander's decision making process. It enables the ability to rapidly respond to, or predict, threats around the world by providing near real time geospatially referenced data and products that serve as the Authoritative Data Source for the full spectrum of Marine Air-Ground Task Force (MAGTF), joint, and multinational partner's operations. DCGS-MC GEOINT enables mission accomplishment across the range of military operations and with all mission partners. The DCGS-MC GEOINT provides the tasking, collection, processing, exploitation, analysis, production, storage, and dissemination of imagery and geospatial information to describe, assess, produce, and visually depict physical features and geographically referenced activities on the Earth. DCGS-MC GEOINT will incorporate those capabilities formally provided by the Tactical Exploitation Group, Topographic Production Capability, Virtual Imagery Processing - Marine Corps, and Target Materials Production legacy systems.

DCGS-MC All Source

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)		P-1 Line Item Number / Title: 4767 / Distributed Common Ground System (DCGS-MC)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0505208M, 0206625M
Line Item MDAP/MAIS Code: N/A DCGS-MC All Source incorporates those capabilities formally provided by the Intelligence Analysis System (IAS) project. This acquisition program is the Marine Corps' primary intelligence analytical toolset at all levels of the Marine Air Ground Task Force (MAGTF). DCGS-MC All Source enables global collaboration with Marine and joint analytical systems. It provides Marines the capability to conduct all-source fusion, analysis, and production of intelligence by automating multiple intelligence functions and processes. This includes the display of current enemy situation, collection requirements, asset management, message parsing, and database updates. DCGS-MC All Source automatically logs intelligence activities into a journal and provides access to intelligence produced by tactical, theater, and national systems and agencies. It facilitates the dissemination and exchange of intelligence and information with other echelons through tactical local area networks and wide area networks from the Marine Expeditionary Force (MEF) garrison facility down to the infantry company level. DCGS-MC All Source consists of intelligence servers and workstations with their associated peripherals and software. DCGS-MC Signals Intelligence (DCGS-MC SIGINT) The Technical Control Analysis Center (TCAC) FoS is the DCGS-MC SIGINT capability and consists of the TCAC Remote Analysis Workstation (RAWS), the Transportable Workstation (TWS) and the Cross Domain Solution (CDS), and is the focal point of Radio Battalions (RADBN), Marine Corps Forces Special Operations Command (MARFORSOC), and Joint Strike Fighter (JSF) Signal Intelligence (SIGINT) operations. TCAC automatically collects, stores, retrieves and plays back digital audio signals. It fuses and analyzes SIGINT data from tactical, theater, and national collectors and databases for dissemination to tactical commanders. TCAC provides SIGINT analysis applications to deployable MAGTF units capable of directing and managing the technical and operational functions of other RADBN SIGINT/EW assets. Additionally, TCAC provides a focal point for national, theater, and tactical data networks for data exchange with tactical SIGINT/EW assets, the IAS and national databases. TCAC will enable the transfer of USMC tactical SIGINT collection and analytical data into the Real-Time Regional Gateway (RT-RG) and by producing DIB enabled products that will be discoverable by any DCGS enabled Marine. The system provides ground processing of Electronic Warfare (EW) information including EW Support and Electronic Attack (EA) data collected by the RADBN and JSF aircraft. The Cross Domain Solution also enables the TCAC to transfer approved and sanitized file types from Top Secret/Sensitive Compartmented Information (TS/SCI) networks (e.g. JWICS/NSAnet) to Marine Corps Enterprise Network-SIPR (MCEN-S) networks for delivery to Tactical Commanders.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 16: Intell/Comm Equipment (Non-Tel)						P-1 Line Item Number / Title: 4767 / Distributed Common Ground System (DCGS-MC)				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0505208M, 0206625M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Distributed Common Ground Surface System (DCGS) (120306)				- / 59.990	- / 12.883	- / 16.081	- / 32.562	- / 0.000	- / 32.562
P-40	Total Gross/Weapon System Cost				- / 59.990	- / 12.883	- / 16.081	- / 32.562	- / 0.000	- / 32.562
*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 Base Appropriation Request: \$12.883M (active) Funding procured a subset of Geospacial (TPC) and Imagery (TEG) hardware assets as part of an incremental equipment refresh. Funding also supported efforts such as Geodetic Survey Sets (GSS) fielding, Commercial Joint Mapping Tool Kit (CJMTK) software integration into DCGS-MC Servers, Advanced Imagery Exploitation Software capability enhancements, as well as ECP's across the DCGS-MC portfolio of systems. FY 2019 Base Appropriation Request: \$16.081M (active) Funding is necessary to support GSS fielding and its geospatial intelligence peripheral components, software integration into DCGS-MC Servers, and Common Geospatial Intelligence (GEOINT) hardware and software consolidation efforts as well as ECP's across the DCGS-MC portfolio of systems. FY 2020 Base Appropriation Request: \$32.562M (active) \$12.046M of the FY20 increase is the realignment of DCGS-MC All Source and DCGS-MC SIGINT resources from LI 4747 Intelligence Support Equipment to the DCGS-MC portfolio. Transition into DCGS-MC is necessary to concentrate investments in an integrated architecture to improve DCGS Enterprise alignment and more effectively leverage the rapid integration of new technology. An additional increase of \$4.435M in FY20 is for GEOINT hardware and software modernization efforts to include intelligence cloud services and hardware upgrades at USMC PED sites in support of project MAVEN Artificial Intelligence/ Machine learning (AI/ML) capabilities. DCGS-MC GEOINT: \$20.516M will support the modernization efforts such as geospatial intelligence peripheral components, software integration into DCGS-MC Servers, and Common Geospatial Intelligence (GEOINT) hardware and software consolidation efforts as well as ECP's across the DCGS-MC portfolio of systems. Additionally, funding will support the collapsing of GEOINT/Target Intelligence, hardware/software baselines and sustaining and advancing critical technology investments in AI/ML and intelligence cloud services. The increase of \$4.435M from FY19 to FY20 supports collapsing GEOINT/Target Intelligence, hardware/software baselines; sustaining and advancing investments in Artificial Intelligence/Machine learning and intelligence cloud services. DCGS-MC ALL SOURCE (IAS): \$7.770M will support the procurement of hardware associated with the Tier II common components and Tier III technical fielding support. The IAS program was previously funded in LI 4747 in FY19 and prior. Decrease of \$1.800M from FY19 (LI 4747 \$9.570M) to FY20 supports the completion of the Tier I server procurement. DCGS-MC SIGINT (TCAC): \$4.276M will support the Transportable Work Station (TWS) hardware procurement, the Fielding and Initial Engineering, Tech and Management support for the Cross Domain Solution (CDS), and Initial software procurement for TCAC Family of Systems (FoS). The TCAC program was previously funded in LI 4747 in FY19 and prior. Decrease of \$2.473M from FY19 (LI 4747 \$6.749M) to FY20 supports the completion of the Remote Analyst Work Station (RAWS) server procurement.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16						P-1 Line Item Number / Title: 4767 / Distributed Common Ground System (DCGS-MC)						Item Number / Title [DODIC]: 1 / Distributed Common Ground Surface System (DCGS) (120306)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-		-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				59.990		12.883		16.081		32.562		0.000		32.562				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-		-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				59.990		12.883		16.081		32.562		0.000		32.562				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-		-		
Total Obligation Authority <i>(\$ in Millions)</i>				59.990		12.883		16.081		32.562		0.000		32.562				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		0.166		-		0.166				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) DCGS-MC GEOINT: Enterprise DIB Service (EDS) Solution	-	-	8.492	-	-	-	-	-	-	-	-	2.306	-	-	-	-	-	2.306
1.1.2) DCGS-MC GEOINT: H/W ⁽¹⁾	-	-	-	-	-	9.299	-	-	9.935	-	-	12.174	-	-	-	-	-	12.174
1.1.5) DCGS-MC All Source: Common Intel Server Tier II ⁽²⁾	-	-	-	-	-	-	-	-	-	-	-	5.642	-	-	-	-	-	5.642
1.1.7) DCGS-MC SIGINT: Transportable Work Station (TWS) ⁽³⁾	-	-	-	-	-	-	-	-	-	-	-	2.300	-	-	-	-	-	2.300
1.1.10) Prior Year Funding Total	-	-	14.605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	23.097	-	-	9.299	-	-	9.935	-	-	22.422	-	-	-	-	-	22.422
Subtotal: Hardware Cost	-	-	23.097	-	-	9.299	-	-	9.935	-	-	22.422	-	-	-	-	-	22.422
Software Cost																		
Recurring Cost																		
2.1.1) DCGS-MC GEOINT: Software	-	-	-	-	-	1.978	-	-	2.532	-	-	3.783	-	-	-	-	-	3.783
2.1.2) DCGS-MC SIGINT: Software	-	-	-	-	-	-	-	-	-	-	-	0.750	-	-	-	-	-	0.750

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Exhibit P-5, Cost Analysis: PB 2020 Navy										Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 16					P-1 Line Item Number / Title: 4767 / Distributed Common Ground System (DCGS-MC)										Item Number / Title [DODIC]: 1 / Distributed Common Ground Surface System (DCGS) (120306)									
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
2.1.3) Prior Years Funding Total	-	-	7.351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	7.351	-	-	1.978	-	-	2.532	-	-	4.533	-	-	-	-	-	4.533
Subtotal: Software Cost	-	-	7.351	-	-	1.978	-	-	2.532	-	-	4.533	-	-	-	-	-	4.533
Support Cost																		
3.1) EDS Support	-	-	6.312	-	-	-	-	-	0.750	-	-	-	-	-	-	-	-	-
3.2) DCGS-MC GEOINT: Support	-	-	3.573	-	-	-	-	-	2.000	-	-	2.253	-	-	-	-	-	2.253
3.3) TPC: Support	-	-	4.415	-	-	1.606	-	-	0.864	-	-	-	-	-	-	-	-	-
3.4) DCGS-MC All Source: Support	-	-	-	-	-	-	-	-	-	-	-	2.128	-	-	-	-	-	2.128
3.5) DCGS-MC SIGINT: Support	-	-	-	-	-	-	-	-	-	-	-	1.226	-	-	-	-	-	1.226
3.6) Prior Years Funding Total	-	-	15.242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	-	-	29.542	-	-	1.606	-	-	3.614	-	-	5.607	-	-	-	-	-	5.607
Gross/Weapon System Cost	-	-	59.990	-	-	12.883	-	-	16.081	-	-	32.562	-	-	0.000	-	-	32.562

Footnotes:

- (1) DCGS-MC GEOINT Hardware: Increase is in support of modernization efforts to include intelligence cloud services and hardware upgrades at USMC PED sites in support of project MAVEN Artificial Intelligence/Machine learning (AI/ML) capabilities.
- (2) Prior to FY20, DCGS-MC All Source (IAS) funding can be found in PMC LI 4747.
- (3) Prior to FY20, DCGS-MC SIGINT (TCAC) funding can be found in PMC LI 4747.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity:

1109N: Procurement, Marine Corps / BA 04: Communications and Electronics
Equipment / BSA 19: Other Support (Non-Tel)

P-1 Line Item Number / Title:

4625 / Next Generation Enterprise Service

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

Program Elements for Code B Items: N/A

Other Related Program Elements: 0208550M, 0505550M,
0206313M, 0206312M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	209.265	97.014	82.120	114.901	0.000	114.901	79.067	90.021	86.327	88.432	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	209.265	97.014	82.120	114.901	0.000	114.901	79.067	90.021	86.327	88.432	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	209.265	97.014	82.120	114.901	0.000	114.901	79.067	90.021	86.327	88.432	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Next Generation Enterprise Network (NGEN) is a Department of the Navy (DON) enterprise program (ACAT IAC) which provides secure, net-centric data and services to Navy and Marine Corps personnel. NGEN forms the foundation for the DON's future Naval Networking Environment (NNE), is interoperable with and leverages other DOD provided Net-Centric Enterprise Services and supports the Joint Information Environment (JIE). For the Marine Corps, NGEN is a Government Owned/Government Operated (GO/GO) model augmented by NGEN contractors with the garrison Marine Corps Enterprise Network (MCEN) representing the NGEN Marine Corps management domain. NGEN (USMC) supports the Marine Corps Enterprise Network (MCEN) using a regionalized model, executed through Marine Forces Cyberspace Command, Marine Corps Cyberspace Operations Group (formerly Marine Corps Network Operations and Support Center (MCNOSC) and MAGTF IT Support Centers (MITSCs). The NGEN (USMC) program provides contractor support for the operation and support of the MCEN Non-secure Internet Protocol Router Network (MCEN-N) to include multiple contracts that provide equipment refresh. The program also supports hardware/software license and warranty generating lifecycle services ultimately enabling Cyber/Information Technology (CYBER/IT) capabilities for the Marine Corps in accordance with the NGEN Acquisition Strategy. This capabilities include enterprise infrastructure, end-user workstations, service desk, and network operations centers at Marine Corps base/post/stations and regional installation commands CONUS and OCONUS (Hawaii, Japan, Germany, and Korea).

NGEN will deliver an end-to-end hosting solution to consolidate and replace End-Of-Life (EOL) hardware/software (HW/SW) and infrastructure that currently provides enterprise network services (email, file storage, security services, identity management, etc.) to MCEN-N users (CONUS and OCONUS). It also provides High Availability/Disaster Recovery (HA/DR) capabilities that are not currently available in support of USMC Continuity of Operations (COOP) requirements. The requirement also includes the delivery of a Wide Area Network (WAN) transport solution based upon the JIE and Joint Regional Security Stack (JRSS) construct to consolidate and replace EOL HW/SW that currently provides enterprise network WAN transport services to MCEN-N users. As the consolidated, upgraded solution is developed, the program will continue to tech refresh end user devices, servers, routers, switches, network storage, software, initial equipment warranties, and defensive cyberspace capabilities (intrusion prevention systems, firewalls, etc.). The hardware and software for this refresh differs in quantities and costs based on varying requirements including the current pricing. The quantities that are ordered are based on hardware/software end of service/life limitations and the operational balance between security and risk management. Tech Refresh includes the design, configuration, functional testing, and integration of commercial or non-developmental network solutions to resolve and mitigate network security vulnerabilities in conjunction with newer technology insertion to improve reliability, improve maintainability, reduce cost, and/or add minor performance enhancement.

NACCR is an Abbreviated Acquisition Program (AAP) modification to the NGEN and SONIC Programs of Record (PORs) supporting the network access control concept on the MCEN. The NACCR end state solution provides an integrated capability allowing only authorized and compliant assets connection to the garrison enterprise network. This solution utilize 802.1X and Active Directory authentication protocols, as well as a series of compliance checks to ensure that critical software patches, anti-virus/anti-malware definitions and other established compliance criteria are current for assets on the network. It also

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0208550M, 0505550M, 0206313M, 0206312M
Line Item MDAP/MAIS Code: N/A		
generates trouble tickets as required and reports compliance standards. Any asset found to be non-compliant with the established criteria will be forced into a partially isolated network segment, where required remediation corrective actions will be taken. Should the automated remediation efforts prove unsuccessful after the prescribed number of attempts, the asset will be forced into a completely isolated network segment until it can be manually brought into compliance.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0208550M, 0505550M, 0206313M, 0206312M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Next Generation Enterprise Service	P-5a, P-21			- / 209.265	- / 97.014	- / 82.120	- / 114.901	- / 0.000	- / 114.901
P-40	Total Gross/Weapon System Cost				- / 209.265	- / 97.014	- / 82.120	- / 114.901	- / 0.000	- / 114.901
*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: FY18 Baseline Appropriation Request: \$97.014M funding procured services, hardware and software supporting end user devices, network infrastructure technical refresh, and procurement of Wireless Local Area Network (WLAN) equipment. Tech refresh supported the MCEN Unification Campaign Plan, Cyberspace Operations requirements, and the Marine Corps' implementation of the Joint Information Environment (JIE), which includes NIPR Installation Processing Nodes (IPN) critical design and site configuration. Tech Refresh included the design, configuration, and functional testing and integration of commercial or non-developmental network solutions to resolve and mitigate network security vulnerabilities. This was in conjunction with the insertion of newer technology to improve reliability, improve maintainability, reduce cost, and/or add minor performance enhancement. The DPRI Guam (\$32K) NGEN requirement in FY18 supported MCEN-N access requirements for Marine Corps Activity Guam (MCAG) personnel needing computer assets. Cost Elements in FY 2018 were updated to reflect actuals in PB20 because they were unable to be updated during the PB19. The FY 2018 End User Device quantities decreased from 23,500 to 9,750. The decrease was due to receiving an influx of funding from the FY 2017 ATR which provided for the procurement of additional End User Devices required to support the mandated WIN 10 transition. The remaining funds were realigned to address the reprioritization of efforts from Cost Elements 1.1.1 and 1.1.2 to Cost Element 1.1.3 for the upgrade/modernization of end of life/end of service equipment. If the equipment was not replaced, then it would have been removed from the network which would have caused network disruptions. This reprioritization aligns with the Marine Corps' Assured Command and Control Strategy, transforming and optimizing the non-Classified Marine Corps Enterprise Network and directly supports DoD's Comply To Connect (C2C) initiative through network modernization. In addition, unit costs for End User Devices fluctuate from year to year due to changes in the quantities procured. FY 2019 Baseline Appropriation Request: \$82.120M ensures the Marine Corps is defending and protecting the MCEN against cyber-attacks and vulnerabilities. Funding procures services, hardware and software supporting end user devices, and network infrastructure technical refresh. Tech refresh supports the MCEN Unification Campaign Plan, Cyberspace Operations requirements, and the Marine Corps' implementation of the Joint Information Environment (JIE) which includes Enterprise Infrastructure Modernization (EIM) critical design and site configuration. Tech Refresh includes the design, configuration, and functional testing and integration of commercial or non-developmental network solutions to resolve and mitigate network security vulnerabilities. This is in conjunction with the insertion of newer technology to improve reliability, improve maintainability, reduce cost, and/or add minor performance enhancement. In addition, FY 2019 efforts include the continuation of WLAN implementation which will increase the operational readiness of operating forces and decrease maintenance time by allowing the maintainers to connect to technical manuals and maintenance systems while they are working. Currently maintainers must leave their work and go to a kiosk where there is a wired connection. Cost Elements in FY 2019 were updated to reflect actuals. The \$14.894M decrease in funding was primarily due to the reduction in EUDs purchased as a lingering effect from the greater number additional EUDs purchased to support that transition. The purchase reduction also required less field support funding. Changes when compared to PB 2019 were caused by the realignment of Marine Corps resources in order to implement and conform with the Marine Corps' Assured Command and Control Strategy. FY 2020 Baseline Appropriation Request: \$114.901M will ensure the Marine Corps is defending and protecting the MCEN against cyber-attacks and vulnerabilities. Overall, FY 2020 funding increased \$30.044M from FY 2019 which reflects the Marine Corps decision to align resources to Next Generation Enterprise Network Enhancement in order to replace aging and end-of-life network infrastructure which will increase the Marine Corps' Enterprise Network's reliability and security posture in order to defend the network against cyberattacks from both Nation-States and third party actors. The baseline appropriations request also includes \$78K which is needed to procure End User Devices in support of MCB Guam personnel.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0208550M, 0505550M, 0206313M, 0206312M
Line Item MDAP/MAIS Code: N/A		
End User Device (Cost Element 1.1.1) funding increased from \$5.001M in FY 2019 to \$15.998M in FY 2020, a \$10.997M increase, due to the refresh/replacement of End User Devices (EUDs) which will enable users to remain connected to the network with a fully compliant EUD. Replacing the aging EUDs will reduce the amount of equipment which is no longer receiving software patches or updates to operating systems which resolves cybersecurity vulnerabilities. If these EUDs are not replaced, then there will be an increased cyber security risk to the Marine Corps network which will lead to users being unable to connect to the network and perform their required duties as their non-compliant EUDs are removed from the network. Unit costs increase from FY 2019 to FY 2020 is due to inflation. Fielding Support (Cost Element 1.1.2) funding increased from \$0.763M in FY 2019 to \$2.288M in FY 2020, a \$1.525M increase due to increasing the quantity of EUDs purchased for refresh in FY 2020, 9,552 laptops. This cost element is directly related to changes in cost elements 1.1.1 and 1.1.3. Network Equipment Tech Refresh (Cost Element 1.1.3) funding increased from \$21.257M in FY 2019 to \$60.262M in FY 2020, a \$39.005M increase, due to reprioritizing efforts from Cost Elements 1.1.1 and 1.1.2 to Cost Element 1.1.3 for the upgrade/modernization of end of life/end of service equipment. This reprioritization aligns with the Marine Corps' Assured Command and Control Strategy which focuses on transforming and optimizing the non-Classified side of the Marine Corps Enterprise Network and directly supports DoD's Comply To Connect (C2C) initiative through network modernization. Upgrades include the procurement of 802.1X access switches enabling the Network Access Control portion of the C2C requirement found in Section 1653 of the FY 2017 NDAA. Additionally, the equipment procured under this cost element will be replacing equipment that is no longer receiving security patches or updates from the vendor and is therefore more vulnerable to hostile actors and other cybersecurity vulnerabilities. If not replaced, these aging network devices will be removed from the network as a cybersecurity precaution and this will lead to Marine Corps users being unable to connect to the MCEN. The increase will enable the Marine Corps to replace the aging network devices with current cybersecurity standard compliant devices which will enable users across the Marine Corps to continue to operate without network disruptions. Enterprise Infrastructure Modernization (EIM) (Cost Element 1.1.4) funding increased from \$30.199M in FY 2019 to \$30.353M in FY 2020, a \$0.154M increase, due to inflation. Funding under this cost element provides for the upgrading and modernizing the Enterprise Service Stacks (ESS), Installation Processing Nodes (IPN), Installation Service Node (ISN) and Geographically Separated Units (GSU) across the non-Classified side of the Marine Corps Enterprise Network. These modernizations will support the Marine Corps' ability to migrate to the Joint Information Environment (JIE) and the cloud by increasing bandwidth which will enable individual and organizational mobility and supports the rapid deployment of mission critical applications and services. In addition, the migration to the cloud will result in reducing long network engineering/provision lead times. Wireless Local Area Network (WLAN) (Cost Element 1.1.5) funding decreased from \$24.000M in FY 2019 to \$6.000M in FY 2020, an \$18.000M decrease, due to the ramping down of initial procurement of WLAN capabilities to the maintenance bays and stations. Funding in this cost element provides for the completion of the WLAN project at the initial maintenance bays and hangars installations. This effort will enable maintainers to access updated technical manual messages and updated maintenance information/alerts. The implementation of WLAN at maintenance bays and hangars, resulted in a 25% increase to the number of Ready Basic Aircraft due to efficiencies generated from WLAN. Network Access Control Compliance and Remediation (Cost Element 1.2.1) funding decreased from \$0.900M in FY 2019 to \$0.000M in FY 2020, a \$0.900M decrease due to the completion of initial fielding of the discovery tool identifying the physical devices on the network.		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19							P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service						Item Number / Title [DODIC]: 1 / Next Generation Enterprise Service								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				209.265			97.014			82.120			114.901			0.000			114.901		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				209.265			97.014			82.120			114.901			0.000			114.901		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				209.265			97.014			82.120			114.901			0.000			114.901		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)			
Hardware Cost																					
Recurring Cost																					
1.1.1) End User Devices (EUD) Tech Refresh ^{(†) (1)}	1,061.97	74,842	79.480	1,118.15	9,750	10.902	1,118.54	4,471	5.001	1,140.84	14,023	15.998	-	-	-	1,140.84	14,023	15.998			
1.1.2) Fielding Support ⁽²⁾	-	-	6.472	-	-	2.398	-	-	0.763	-	-	2.288	-	-	-	-	-	2.288			
1.1.3) Network Equipment Tech Refresh ⁽³⁾	-	-	90.405	-	-	38.173	-	-	21.257	-	-	60.262	-	-	-	-	-	60.262			
1.1.4) Enterprise Infrastructure Modernization (EIM) ⁽⁴⁾	-	-	18.114	-	-	27.215	-	-	30.199	-	-	30.353	-	-	-	-	-	30.353			
1.1.5) Wireless Local Area Network (WLAN) ⁽⁵⁾	-	-	1.858	-	-	8.535	-	-	24.000	-	-	6.000	-	-	-	-	-	6.000			
Subtotal: Recurring Cost	-	-	196.329	-	-	87.223	-	-	81.220	-	-	114.901	-	-	-	-	-	114.901			
Non Recurring Cost																					
1.2.1) Network Access Control, Compliance and Remediation (NACCR) ⁽⁶⁾	-	-	12.936	-	-	9.791	-	-	0.900	-	-	-	-	-	-	-	-	-			
Subtotal: Non Recurring Cost	-	-	12.936	-	-	9.791	-	-	0.900	-	-	-	-	-	-	-	-	-			

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19						P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service						Item Number / Title [DODIC]: 1 / Next Generation Enterprise Service						
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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 Cost	-	-	209.265	-	-	97.014	-	-	82.120	-	-	114.901	-	-	-	-	-
Gross/Weapon System Cost	-	-	209.265	-	-	97.014	-	-	82.120	-	-	114.901	-	-	0.000	-	-	114.901

(t) indicates the presence of a P-5a

Footnotes:

- (1) End User Device (Cost Element 1.1.1) funding increased from \$5.001M in FY 2019 to \$15.998M in FY 2020, a \$10.997M increase. This is due to the return to a more normal refresh cycle following the plus up in FY18, that also affected FY19 EUD totals, to meet the DoD WIN10 compliance mandate. Unit costs increase from FY 2019 to FY 2020 is due to inflation.
- (2) The Fielding Support (Cost Element 1.1.2) funding increased from \$0.763M in FY 2019 to \$2.288M in FY 2020, a \$1.525M increase. This is due to additional assets, 9,552 laptops, procured in FY 2020 to replace aging EUDs. This cost element is directly related to changes in cost elements 1.1.1 and 1.1.3.
- (3) Network Equipment Tech Refresh (Cost Element 1.1.3) funding increased from \$21.257M in FY 2019 to \$60.262M in FY 2020. This reprioritization aligns with the Marine Corps' Assured Command and Control Strategy which focuses on transforming and optimizing the non-Classified side of the Marine Corps Enterprise Network and directly supports DoD's Comply To Connect (C2C) initiative.
- (4) Enterprise Infrastructure Modernization (EIM) (Cost Element 1.1.4) This program had a \$0.154M increase from FY19 to FY20 due to inflation.
- (5) Wireless Local Area Network (WLAN) (Cost Element 1.1.5) funding decreased from \$24.000M in FY 2019 to \$6.000M in FY 2020. This is due to the near completion of the initial procurement of WLAN capabilities for maintenance bays and stations across the Marine Corps. The implementation of WLAN at maintenance bays and hangars, resulted in a 25% increase to the number of Ready Basic Aircraft due to efficiencies generated from WLAN.
- (6) Network Access Control Compliance and Remediation (Cost Element 1.2.1) funding decreased from \$0.900M in FY 2019 to \$0.000M in FY 2020, a \$0.900M decrease due to the completion of initial fielding of the discovery tool identifying the physical devices on the network.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19				P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service				Item Number / Title [DODIC]: 1 / Next Generation Enterprise Service				

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) End User Devices (EUD) Tech Refresh ^(†)		2018 ⁽⁷⁾	CDW Government LLC / Vernon Hills, IL	C / FFP	MCSC, Quantico, VAMCSC, Quantico, VA	Nov 2017	Dec 2017	9,750	1,118.15	Y		
1.1.1) End User Devices (EUD) Tech Refresh ^(†)		2019	TBD ⁽⁸⁾ / TBD	C / FFP	MCSC, Quantico, VAMCSC, Quantico, VA	Feb 2019	Mar 2019	4,471	1,118.54	Y		
1.1.1) End User Devices (EUD) Tech Refresh ^(†)		2020 ⁽⁹⁾	TBD ⁽⁸⁾ / TBD	C / FFP	MCSC, Quantico, VA	Feb 2020	Mar 2020	14,023	1,140.84	Y		

^(†) indicates the presence of a P-21

Footnotes:

⁽⁷⁾ Unit cost has been updated to actuals after contract award.

⁽⁸⁾ The vendor for the FY 2019 tech refresh has not been determined, the vendor will be decided as part of the recompete effort.

⁽⁹⁾ Unit cost increases from FY 2019 to FY 2020 reflects inflation.

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																	
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19										P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service										Item Number / Title [DODIC]: 1 / Next Generation Enterprise Service																	
Cost Elements <i>(Units in Thousands)</i>							Fiscal Year 2018										Fiscal Year 2019														B A L A N C E						
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019																				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
1.1.1) End User Devices (EUD) Tech Refresh ⁽¹⁾																																					
Prior Years Deliveries: 74842																																					
	1	2018	NAVY		9.750 (10)	.000	9.750		A -	5.000	4.750																	.000									
	2	2019	NAVY		4.471	.000	4.471														A -		.745	.745	.745	.745	.745	.746			.000						
	2	2020	NAVY		14.023	.000	14.023																														14.023
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019															
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19										P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service										Item Number / Title [DODIC]: 1 / Next Generation Enterprise Service															
Cost Elements <i>(Units in Thousands)</i>							Fiscal Year 2020										Fiscal Year 2021													BALANCE					
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020										Calendar Year 2021																		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP				
1.1.1) End User Devices (EUD) Tech Refresh ⁽¹⁾																																			
Prior Years Deliveries: 74842																																			
	1	2018	NAVY		9.750 (10)	9.750	.000																											.000	
	2	2019	NAVY		4.471	4.471	.000																											.000	
	2	2020	NAVY		14.023	.000	14.023					A -	2.337	2.337	2.337	2.337	2.337	2.338																	.000
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19				P-1 Line Item Number / Title: 4625 / Next Generation Enterprise Service					Item Number / Title [DODIC]: 1 / Next Generation Enterprise Service		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	CDW Government LLC - Vernon Hills, IL			37,500	0	0	0	0	0	0	0	0
2	TBD ⁽⁸⁾ - TBD			37,500	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).

Footnotes:

⁽⁸⁾ The vendor for the FY 2019 tech refresh has not been determined, the vendor will be decided as part of the recompetit effort.

⁽¹⁰⁾ FY 2018 quantities have been updated to actuals. The quantity decreased due to the FY 2017 ATR which provided funding to procurement of End User Devices in support of WIN 10 implementation.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)							P-1 Line Item Number / Title: 4630 / Common Computer Resources					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	379.808	58.810	62.904	51.094	0.000	51.094	43.920	59.646	44.526	44.523	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	379.808	58.810	62.904	51.094	0.000	51.094	43.920	59.646	44.526	44.523	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	379.808	58.810	62.904	51.094	0.000	51.094	43.920	59.646	44.526	44.523	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Beginning in FY 2020, MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG), and UNITED STATES MARINE CORPS FORCES CYBERSPACE COMMAND (MARFORCYBER) were transferred to a new procurement line item, 4645 Cyberspace Activities, in order to consolidate Marine Corps Cyberspace Procurement Activities into one LI.												
MARINE CORPS COMMON HARDWARE SUITE (MCHS) provides Commercial-Off-The-Shelf (COTS) laptops, workstations, software, servers, and other information technology (IT) hardware devices (ie Mobility) to support the Operating Forces and other Marine Corps customers. MCHS provides support for two principal groups: 1) United States Marine Corps (USMC) Tactical and Functional Programs of Record that use COTS IT hardware as part of their fielded systems, and 2) tactical and other Marine Corps customers not supported by Next Generation Enterprise Network (NGEN) such as Marine Corps Forces, Europe; Marine Corps Forces, Korea; Marine Corps Forces, Africa; and stand-alone Marine Corps units and schoolhouses.												
FORMALIZED SCHOOLS TECHNICAL REFRESH (FSTR) funds and manages the software and IT hardware required to provide a robust and reliable Computer-Based Training (CBT) capability for TECOM (Training and Education Command) schools. Computers used in TECOM classrooms are not funded or managed by HQMC as part of the Marine Corps Enterprise Network (MCEN), and must therefore be funded and managed by the FSTR program. This program standardizes IT equipment for the 812 classrooms throughout TECOM and formalizes the upgrade and refresh process. In order to maintain adequate reliability and software compliance, computers need to be refreshed every four years. FSTR provides reliable hardware, software, and network resources to support Marine Corps Programs of Instruction and curriculum, delivered in TECOM formal classrooms. The FSTR program is foundational to realizing the Commandant of the Marine Corps' vision of exploiting technology as an enabler to advance Training & Education capabilities.												
MARINE CORPS ENTERPRISE INFORMATION TECHNOLOGY SERVICES (MCEITS) provides an overarching portfolio of capabilities to deliver "Power to the Edge" for the Marine Corps. Born from an effort to establish a Continuity of Operations Plan of Headquarters Marine Corps (HQMC) Automated Information Systems, MCEITS is a unifying framework of both the Net-Centric Enterprise Services to be delivered, and the infrastructure and systems which must be deployed to enable delivery of those services. MCEITS realigns the existing USMC environment of applications, databases, networks, and facilities into an integrated architecture. It provides the environment to access enterprise shared data and services while improving operational flexibility, responsiveness, and effectiveness for operating forces and the supporting establishment based on a common infrastructure and shared services. MCEITS allows for achievement of architectural standardization, consolidated management, seamless interoperability, and access to the data residing in our currently fielded applications (business and tactical). MCEITS enables access to enterprise information and provides the ability to collaborate and share information across the business and warfighter domains. MCEITS includes work to rationalize, modernize, virtualize, migrate, and host systems and applications residing in the Marine Corps enterprise information technology center (i.e., data												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4630 / Common Computer Resources	
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M		Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A			
center) located in Kansas City, Missouri. Additionally, MCEITS has a secondary, fail-over site located in Camp Lejuene, North Carolina, a System Integration Environment (SIE), and two Distributed Platforms. Procurement funding provides for various computers,network equipment, racks, etc., and associated installation costs. MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) is an enterprise level system to automate administrative procedures for recruiting station operations. This customized automated System, centered on procedures in the Guidebook for Recruiters, Volume I, dramatically improves efficiency and effectiveness in Marine Corps recruiting. Furthermore, Military Entrance Processing Command requires Marine Corps recruiting to provide information in electronic format only. MCRISS is the Marine Corps Recruiting Command's program to manage applicant processing from commitment to accession/ commission into the Marine Corps and Marine Corps Reserve. This enterprise approach allows for efficient sharing of information about potential recruits and recruiter screening efforts, yielding a more cost effective process. MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG) (formerly MCNOSC) executes Marine Corps Global Information Grid Operations and Marine Corps Defensive Cyber Operations in support of Marine Corps operational requirements in order to enhance freedom of action across all warfighting domains, while denying the efforts of adversaries to degrade or disrupt this advantage through cyberspace. MCCOG is the Network Operations (NETOPS) component of Marine Corps Forces Cyberspace Command and provides network situational awareness, command and control, and technical support to Marine Corps operating forces and supporting establishment organizations, both in garrison and while deployed. MCCOG is the primary DOD Computer Network Defense Service Provider for the U.S. Marine Corps and directs Service actions to prevent and respond to security incidents. The MCCOG delivers numerous enterprise services for the Marine Corps, to include mainframe computer services management, Defense Message System (DMS), DOD Public Key Infrastructure (PKI), and Active Directory/Global Address List. The MCCOG is responsible for the operations and defense of MCEITS, which delivers data center services to the Marine Corps. Finally, MCCOG provides technical expertise to HQMC, Marine Corps Combat Development Command (MCCDC), Marine Corps Systems Command (MCSC), and Marine Corps organizations around the world in support of Information Technology initiatives undertaken within the Marine Corps and DOD. The PMC funding will support Core Competencies in the Computer Networks Defense and NETOPS areas with skilled cyber-warriors (24x7x365). The added responsibilities and network security events have required continued operational employment of current assets and personnel. PMC funding is based on increased mission requirements dictated by DoD/USSTRATCOM/USCYBERCOM to defend the network. The procurement funding will be used to refresh the MCCOG Alternate Network Operations Security Center, USMC Site R refresh, Network Common Operational Picture Tools, Host Based Security Systems, Secure Configuration Compliance Validation Initiative and Secure Configuration Remediation Initiative (SCCVI/SCRI), Intrusion Prevention and scanning tools, Virtual Private Network, and other operations and defense tools. Beginning in FY20 this effort moves to LI 4645. SECURE OPERATIONAL NETWORK INFRASTRUCTURE AND COMMUNICATIONS (SONIC) program provides funding to procure and support hardware, software, infrastructure and services necessary to support and improve critical C2 network operations. This funding enables central management of refresh and sustainment of hardware, software, and the infrastructure necessary to provide network services on the USMC Garrison SIPRNET. This ensures enterprise architecture goals and standards are established and maintained and takes advantage of quantity-related discounts. The SIPRNET provides Marine Corps garrison forces with a secure digital means to communicate and share data, information, and knowledge at the secret level with dispersed organizations located around the world. SONIC resources the tech refresh of technologically obsolete equipment, shortfalls in network operational capabilities, solutions to resolve and mitigate network security vulnerabilities, and technology insertion for increased SIPRNET capability as expressed by the Marine Corps Forces (MARFORs). Tech Refresh includes the design, configuration, and functional testing and integration of commercial or non-developmental network solutions to resolve and mitigate network security vulnerabilities. MARINE CORPS INFORMATION OPERATION PROGRAM (MCIOP) supports DOD capabilities based analysis (CBA) to address emerging Marine Air Ground Task Force C2 program and cyberspace requirements. MCIOP supports Information Operations (IO) Range research/modeling/simulation conducted by Marine Corps Warfighting Lab (MCWL), industry, and/or academia to explore existing and emergent Information Operations initiatives and cyber technologies. UNITED STATES MARINE CORPS FORCES CYBERSPACE COMMAND (MARFORCYBER) will procure hardware and software for Deployable Mission Support Systems (DMSS). DMSS kits are maintained with hardware support and software renewals, and refresh perpetual software licenses for DMSS kits. Beginning in FY20 this effort moves to LI 4645. PAPERLESS ACQUISITION (PA) SYSTEMS is comprised of two programs, Purchase Request Builder (PR Builder) and Standard Procurement System / Procurement Desktop Defense (SPS/PD2). PR Builder is a fully web-based, Mission Assurance Category (MAC) III sensitive business system. SPS/PD2, part of the Joint SPS Acquisition Program, is the USMC's authoritative contracting generation system within the Marine Corps' electronic Systems Business Enterprise. Both of these systems provide system-to-system interface with other DoD financial management systems which include Standard Accounting, Budgeting, and Reporting System (SABRS), Federal Government's Electronic Document Access system (EDA), and Invoice, Receipt Acceptance and Property Transfer.			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4630 / Common Computer Resources
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
TECHNOLOGY SERVICES ORGANIZATION (TSO):provides development, testing, and production hosting environments in support of the Marine Corps enterprise pay, personnel, accounting and financial management systems to include Marine Corps Total Force System (MCTFS), Marine Online, Marine Corps Orders Resource System (MCORS), Standards Accounting, Budgeting and Reporting System (SABRS), and the Marine Corps Financial Integrated Analysis System (MCFIAS). The TSO also provides complete SDLC activities for these systems as well as development of the Navy, Air Guard, and Air Force Reserve Order Writing Systems. The TSO is implementing the Marine Corp's SABRS application to the Department of the Navy. PROFESSIONALL DEVELOPMENT - MARINE CORPS UNIVERSITY: The Professional Development Program develops, delivers, and evaluates Professional Military Education (PME) and training through resident and distance education programs to prepare leaders to meet the challenges of the national security environment. The .edu expansion provides wireless connectivity, information sharing, and audio visual capabilities in support of Education Command's effort to modernize PME. Having .edu networks at all of the Marine Corp University campuses creates the opportunity for courses to collaborate, conduct research, wargame, and conduct video teleconferencing. [P40A / Data Center Tech Refresh]: Datacenter Tech Refresh (Cost Element 1.3.7) funding decreased from \$19.118M in FY 2019 to \$18.010M in FY 2020, a \$1.108M decrease. This is due to a strategic change to incrementally implement tech refresh annually instead of a 5-year "rip and replace" strategy. Infrastructure procured under this cost element will replace equipment essential to sustaining capabilities in the datacenter. The replacement of aging and non-compliant infrastructure is required to support emerging cybersecurity standards and compliance directives. If infrastructure is not replaced, this will put the existing system at risk for Cybersecurity vulnerabilities which result in the inability to share critical mission essential data across the Marine Corps.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4630 / Common Computer Resources				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Common Computer Resources	P-5a			- / 379.808	- / 58.810	- / 62.904	- / 51.094	- / -	- / 51.094
P-40	Total Gross/Weapon System Cost				- / 379.808	- / 58.810	- / 62.904	- / 51.094	- / 0.000	- / 51.094
*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: Beginning in FY 2020, MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG), and UNITED STATES MARINE CORPS FORCES CYBERSPACE COMMAND (MARFORCYBER) were transferred to a new procurement line item, 4645 Cyberspace Activities, in order to consolidate Marine Corps Cyberspace Procurement Activities into one LI. FY 2018 Justifications: MARINE CORPS COMMON HARDWARE SUITE (MCHS) Programs of Record listed in the description have been moved to their respective BLIs starting in FY18 for execution and will not be included under the MCHS POR in this exhibit (See Program Description for full list of programs). Marine Corps Common Hardware (MCHS) FY 2018 Base Appropriation Request: \$2.354M supported the purchase of hardware/software for Marine Forces Europe/Marine Forces Korea (MARFORE/MARFORK) and the Enterprise Staging & Warehousing effort (ES&W) that includes the receipt, inventory, imaging, kitting, and shipping (RIKS) of IT hardware to MFE/MFA, MFK, and OPFORs (shipped in a standard configuration ready to use). FORMALIZED SCHOOLS TECHNICAL REFRESH (FSTR) FY 2018 Base Appropriation Request: \$3.275M supported TECOM classroom refresh and tablet procurement. SECURE OPERATIONAL NETWORK INFRASTRUCTURE AND COMMUNICATIONS (SONIC) FY18 Baseline Appropriation Request: \$20.869M funding procured services, hardware and software supporting end user devices, network infrastructure technical refresh, and procurement of Encryptors equipment. Tech refresh supported the MCEN Unification Campaign Plan, Cyberspace Operations requirements, and the Marine Corps' implementation of the Joint Information Environment (JIE). Tech Refresh includes design, configuration, and functional testing and integration of commercial or non-developmental network solutions to resolve and mitigate network security vulnerabilities on the SIPRNet. This is in conjunction with the insertion of newer technology to improve reliability, improve maintainability, reduce cost, and/or add minor performance enhancement. Changes as compared to PB 2019 were caused by the realignment of Marine Corps resources in order to align with the Marine Corps' Assured Command and Control Strategy. FY 2018 SIPR End User Device quantities decreased from 11,226 to 2,112 due to receiving FY 2017 funding. These devices were critical to service WIN 10 implementation. In addition, unit costs for End User Devices fluctuate from year to year due to changes in the quantities procured. Cost Elements in FY 2018 were updated to reflect actuals. MARINE CORPS ENTERPRISE IT SERVICES (MCEITS) FY 2018 Base Appropriation Request: \$3.207M supported scaling of 1st and 2nd MCEITS IT Center infrastructures to host additional applications planned for migration and to procure hardware for an Application and Development/test environment. Changes compared to PB 2019 were caused by the realignment of Marine Corps resources in order to align with the Marine Corps' Assured Command and Control Strategy, funding was realigned to the MARFORK EIM Cost Element (Cost Element 1.1).										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4630 / Common Computer Resources
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) FY 2018 Base Appropriation Request: \$0.049M provided mission critical software required to support the needs of Marine Corps Recruiting Information Support System. MARINE CORPS INFORMATION OPERATION PROGRAM (MCIOF) FY 2018 Base Appropriation Request: \$0.398M provided mission critical hardware such as workstations and software that are specific to the needs of the intelligence environment. Modeling and simulation explores existing and emergent Information Operations (IO) initiatives and cyber technologies. PAPERLESS ACQUISITION (PA) SYSTEMS FY 2018 Base Appropriation Request: \$0.122M provided mission critical hardware required to support the needs of Paperless Acquisition Systems such as Standard Procurement System (SPS), Electronic Procurement System (EPS), and Purchase Request Builder (PRB). TECHNOLOGY SERVICES ORGANIZATION (TSO) FY 2018 Base Appropriation request: \$1.305M supported laptop and server refresh to include hardware and software supporting the development of Marine Corps enterprise HRM and Financial Management systems. This Technical refresh/upgrade of SABRS database technology from ADABAS to a newer database architecture provides a modern and well-supported database technology that ultimately enables the normalization of Marine Corps financial data in a true relational database. MARFORCYBER: FY 2018 Base Appropriation Request: \$20.924M of which \$10.022M completed MARFORCYBER's headquarters MILCON facility on the East Campus at Fort Meade. It also completed the FY14 MILCON project number P001 items such as Distributed Computing Equipment, Video Teleconferencing and Multi-media Equipment, Network Hardware, Telephone Equipment, Cable Infrastructure, Wireless Center, and Operations Center. Remaining funding procured hardware and software for Deployable Mission Support Systems (DMSS). DMSS kits are maintained with hardware support, software renewals, and refresh perpetual software licenses. DMSS kits are required in order for MARFORCYBER to support Marine units all across the globe. FY 2019 Justifications: Marine Corps Common Hardware (MCHS) FY 2019 Base Appropriation Request: \$0.934M supports the purchase of hardware/software for Marine Forces Europe/Marine Forces Korea (MARFORE/MARFORK) and the Enterprise Staging & Warehousing effort (ES&W) that includes the receipt, inventory, imaging, kitting and shipping (RIKS) of IT hardware to MFE/MFA, MFK, and OPFORs (shipped in a standard configuration ready to use). FORMALIZED SCHOOLS TECHNICAL REFRESH (FSTR) FY 2019 Base Appropriation Request: \$6.764M funding supports procurement of tablets for TECOM classrooms throughout the Marine Corps. Additionally, classrooms for USMC Military Occupational Specialty (MOS) formal schools will be updated and refreshed. SECURE OPERATIONAL NETWORK INFRASTRUCTURE AND COMMUNICATIONS (SONIC) FY 2019 Baseline Appropriation Request: \$13.285M ensures the Marine Corps continues to defend and protect the MCEN-S against cyber-attacks and vulnerabilities. Funding procures services, hardware and software supporting Classified End User Devices, and network infrastructure technical refresh. Tech refresh, in conjunction with the insertion of newer technology to improve reliability, improve maintainability, reduce cost, and/or add minor performance enhancement, supports the MCEN Unification Campaign Plan, Cyberspace Operations requirements, and the Marine Corps' implementation of the Joint Information Environment (JIE) which includes Enterprise Infrastructure Modernization (EIM) critical design and site configuration. Tech Refresh also includes the design, configuration, and functional testing and integration of commercial or non-developmental network solutions to resolve and mitigate network security vulnerabilities within the classified network. In addition, FY 2019 efforts include the continuation of the Virtual Desktop Infrastructure being fielded at four sites.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4630 / Common Computer Resources
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Cost Elements in FY 2019 were updated to reflect actuals. Changes compared to PB 2019 were caused by the realignment of Marine Corps resources in order to align with the Marine Corps' Assured Command and Control Strategy. FY 2019 Classified End User Device quantities increased from 2,112 to 2,683 due to the decrease in unit cost allowing for more devices to be procured.		
MARINE CORPS ENTERPRISE IT SERVICES (MCEITS) FY 2019 Base Appropriation Request: \$19.118M supports technical refresh and domain consolidation for all MCEITS IT Center infrastructures hosting environments. Funding supports additional application migrations and hardware/software procurements for the Application and Development/test environment and sustainment engineering changes.		
MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) FY 2019 Base Appropriation Request: \$0.362M; Funding supports mission critical software licenses required to support the Modernization of Marine Corps Recruiting Information Support System.		
MARINE CORPS INFORMATION OPERATION PROGRAM (MCIOP) FY 2019 Base Appropriation Request: \$0.408M provides mission critical hardware and software that are specific to the needs of the intelligence environment. Modeling and simulation explores existing and emergent Information Operations (IO) initiatives and cyber technologies.		
PAPERLESS ACQUISITION (PA) SYSTEMS FY 2019 Base Appropriation Request: \$0.124M provides mission critical hardware required to support the needs of Paperless Acquisition Systems such as Standard Procurement System (SPS), Electronic Procurement System (EPS), and Purchase Request Builder (PRB).		
TECHNOLOGY SERVICES ORGANIZATION (TSO) FY 2019 Base Appropriation request: \$0.878M supports laptop and server refresh to include hardware and software supporting the development of Marine Corps enterprise HRM and Financial Management systems.		
MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG): FY 2019 Base Appropriation Request: \$7.683M procures hardware and software for Defensive Cyber Operations support and network infrastructure upgrades.		
MARFORCYBER: FY 2019 Base Appropriation Request: \$13.348M procures hardware and software for Deployable Mission Support Systems (DMSS). DMSS kits are maintained with hardware support, software renewals, and refresh perpetual software licenses. DMSS kits are required in order for MARFORCYBER to support Marine Corps units all across the globe. \$8.488M procures DMSS kits for MARFORCYBER and \$4.860M procures DMSS kits for the Marine Corps Operating Forces.		
FY 2020 Justifications:		
Marine Corps Common Hardware (MCHS) FY 2020 Base Appropriation Request: \$0.953M will support the purchase of hardware/software for Marine Forces Europe/Marine Forces Korea (MARFORE/MARFORK) and the Enterprise Staging & Warehousing effort (ES&W) that includes the receipt, inventory, imaging, kitting, and shipping (RIIKS) of IT hardware to MFE/MFA, MFK, and OPFORs (shipped in a standard configuration ready to use).		
End User Device (Cost Element 1.2) funding increased from \$0.712M in FY 2019 to \$0.731M in FY 2020, a \$0.019M increase, due to the replacement End User Devices (EUDs) that are becoming non-compliant for users at MARFORK and MARFOREUR, this replacement will enable users to remain connected to the network with a fully compliant EUD. Unit costs increase from FY 2019 to FY 2020 due to inflation.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4630 / Common Computer Resources
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Fielding Support (Cost Element 1.6) \$0.222M will support the fielding of equipment that is procured through other customer funds. The type of support provided includes the creation of the birth record for equipment to ensure that the equipment can be accounted for in property accountability systems, along with configuring and kitting the equipment to ensure it is consistent with Marine Corps IT standards. FORMALIZED SCHOOLS TECHNICAL REFRESH (FSTR) FY 2020 Base Appropriation Request: \$6.905M funding will support Training and Education Command (TECOM) schoolhouse classroom computer refresh and tablet procurements. The Marine Corps operates 62 Military Occupational Specialty (MOS) producing schools, with an established AAO of over 10,000 computers, required to deliver training and education curriculum. Costs are driven by IT equipment refresh, enterprise software licensing, computer imaging/shipping, and industry best practices. SECURE OPERATIONAL NETWORK INFRASTRUCTURE AND COMMUNICATIONS (SONIC) FY 2020 Baseline Appropriation Request: \$13.946M will ensure the Marine Corps continues to defend and protect the MCEN-S against cyber-attacks and vulnerabilities. The overall FY20 funding increase of \$0.652M from FY 2019 reflects the Marine Corps decision to align resources to Secure Operational Network Infrastructure and Communications enhancement in order to replace aging and end-of-life network infrastructure. This increases the Marine Corps Enterprise Network's reliability and security posture against cyberattacks from both Nation-States and third party actors. The baseline appropriations request also includes \$9K which is needed to procure Classified End User Devices in support of MCB Guam personnel. End User Device (Cost Element 5.1) funding increased from \$3.000M in FY 2019 to \$4.000M in FY 2020, a \$1.000M increase, due to the replacement of Classified End User Devices (EUDs) enabling users to remain connected to the network with a fully compliant EUD. Replacing the aging EUDs will reduce the cybersecurity vulnerabilities arising from these items no longer receiving support or updates. If these EUDs are not replaced, it will be necessary for these users to be removed from the network to protect against cyber threats, thereby resulting in an inability to perform mission essential duties. The Field Support (Cost Element 5.2) funding increased from \$0.254M in FY 2019 to \$0.268M in FY 2020, a \$0.014M increase, due to increasing the quantity of 2,683 laptops procured in FY 2020 to replace aging Classified EUDs, which were procured at the beginning stages of the WIN 10 implementation. This cost element is directly related to changes in cost elements 5.1 and 5.3. Network Equipment Tech Refresh (Cost Element 5.3) funding decreased from \$6.847M in FY 2019 to \$5.598M in FY 2020, a \$1.249M decrease, due to reprioritizing efforts from Cost Elements 5.3 to Cost Element 5.4 for the modernization of service equipment upgrading and modernizing the Classified Enterprise Service Stacks (ESS-S). This reprioritization aligns with the Marine Corps' Assured Command and Control Strategy which focuses on transforming and optimizing the Marine Corps Enterprise Network (MCEN). In addition, the equipment procured under this cost element will be replacing outdated equipment that is no longer receiving security patches or updates from the vendor, increasing cybersecurity vulnerabilities across the MCEN-S. If not replaced, these aging network devices will be removed from the network as a result of not receiving cybersecurity updates which will lead to Marine Corps users being unable to connect to the MCEN. Funding within this cost element will enable the Marine Corps to replace these aging network devices with ones that are compliant with current cybersecurity standards which will enable users across the Marine Corps to continue to operate without network disruptions. Enterprise Infrastructure Modernization Classified (EIM-S) (Cost Element 5.4) funding increased from \$3.000M in FY 2019 to \$4.080M in FY 2020, a \$1.080M increase, for the modernization of the Classified Enterprise Infrastructure. Funding under this cost element provides for upgrading and modernizing the Classified Enterprise Service Stacks (ESS-S), Classified Installation Processing Nodes CLASSIFIED (IPN-S), Classified Installation Service Node (ISN-S) and Geographically Separated Units (GSU) across the Marine Corps within the classified environment. These modernizations will support the Marine Corps' ability to migrate to the Joint Information Environment (JIE) and the cloud by increasing bandwidth, enhancing individual and organizational mobility, and supporting the rapid deployment of mission critical applications and services. In addition, the migration to the cloud will result in reduced long network engineering/provision lead times. Network Access Control Compliance and Remediation (Cost Element 5.5) funding decreased from \$.184M in FY 2019 to \$0M in FY 2020, a \$.184M decrease due to the completion of initial fielding of the discovery tool identifying the physical devices on the network. MARINE CORPS INFORMATION OPERATION PROGRAM (MCIOP)		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4630 / Common Computer Resources	
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0206313M, 0206623M, 0206624M, 0303150M, 0604766M	Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A			
FY 2020 Base Appropriation Request: \$0.416M supports additional hardware refreshes and also will provide mission critical hardware and software that is specific to the needs of the intelligence environment. Modeling and simulation explores existing and emergent Information Operations (IO) initiatives and cyber technologies. The \$0.008M increase in funding from FY19 to FY20 is due to the hardware refresh schedule.			
MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) FY 2020 Base Appropriation Request: \$0.050M will support software licenses which are mission critical and required to support the Modernization of Marine Corps Recruiting Information Support System.			
PAPERLESS ACQUISITION (PA) SYSTEMS FY 2020 Base Appropriation Request: \$0.127M will provide mission critical hardware required to support the needs of Paperless Acquisition Systems such as Standard Procurement System (SPS), Electronic Procurement System (EPS), and Purchase Request Builder (PRB).			
MARINE CORPS ENTERPRISE IT SERVICES (MCEITS) FY 2020 Base Appropriation Request: \$18.010M supports technical refresh for all MCEITS IT Center infrastructures hosting environments. Funding supports additional application migrations, hardware/software procurements for the Application and Development/test environment, and sustainment engineering changes.			
Datacenter Tech Refresh (Cost Element 1.3.7) funding decreased from \$19.118M in FY 2019 to \$18.010M in FY 2020, a \$1.108M decrease. This is due to a strategic change to incrementally implement tech refresh annually instead of a 5-year "rip and replace" strategy. Infrastructure procured under this cost element will replace equipment essential to sustaining capabilities in the datacenter. The replacement of aging and non-compliant infrastructure is required to support emerging cybersecurity standards and compliance directives. If infrastructure is not replaced, this will put the existing system at risk for Cybersecurity vulnerabilities which result in the inability to share critical mission essential data across the Marine Corps.			
Data Center Domain Consolidation (Cost Element 1.3.8) funding decreased from \$10.060M in FY 2019 to \$0.000M in FY 2020. This effort completed in FY 2019.			
PROFESSIONAL DEVELOPMENT - MARINE CORPS UNIVERSITY FY 2020 Base Appropriation Request: \$6.796M. \$1.478M will support the .edu network capacity upgrade will allow five Staff Non-Commissioned Officer Academies (SNCOA) at locations CONUS and OCONUS to be brought on the .edu network. The current network which supports only Marine Corps University at Marine Corps Base Quantico and the SNCOA at Camp Johnson is at capacity which does not allow for any additional capabilities. \$5.318M will support the SNCOA, Camp Pendleton .edu expansion will provide wireless connectivity, information sharing and audio visual capabilities in support of EDCOM's effort to modernize Professional Military Education (PME). This is the next step in expanding the capability which ensures that students receive the same access to information and education that students attending the Quantico and CP Johnson campuses receive. SNCOA campuses that rely on the .mil network for access to resources are restricted and often blocked from sites not approved by .mil hardening efforts. Having .edu networks at all of the MCU campuses creates the opportunity for courses to collaborate, conduct research, wargame, and conduct video teleconferencing.			
TECHNOLOGY SERVICES ORGANIZATION (TSO) FY 2020 Base Appropriation request: \$3.891M supports laptop and network device procurement that enables the development of Marine Corps enterprise HRM and Financial Management systems. This includes the maintenance of the Marine Corps Total Force System (MCTFS), Marine Online (MOL), Marine Corps Orders Resource System (MCORS), Standard Accounting, Budgeting & Reporting System (SABRS) and the Marine Corps Financial Integrated Analysis System (MCFIAS). This Technical refresh/upgrade of SABRS database technology from ADABAS to a newer database architecture provides a modern and well-supported database technology that ultimately enables the normalization of Marine Corps financial data in a true relational database. The increase of \$3M from FY19 to FY20 is funding for MOL Modernization as part of the HR2025 initiative.			

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19							P-1 Line Item Number / Title: 4630 / Common Computer Resources								Aggregated Items Title: Common Computer Resources					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) MARINE CORPS COMMON HARDWARE SUITE (MCHS)																				
1.1) MARFORK EIM	A		-	-	-	-	-	5.859	-	-	-	-	-	-	-	-	-	-	-	-
1.2) MCHS End User Devices ^{(1)(t)}	A		1.268	68,090	86.349	0.781	1,653	1.291	1.118	637	0.712	1.140	641	0.731	-	-	-	1.140	641	0.731
1.3) MCHS Workstations	A		1.194	19,591	23.392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) MCHS Servers	A		8.529	2,699	23.021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) MCHS Other IT Equipment (cables, infrastructure, storage devices, etc)	A		2.631	977	2.570	-	-	0.921	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Fielding Support (2)	A		-	-	0.442	-	-	0.600	-	-	0.222	-	-	0.222	-	-	-	-	-	0.222
1.7) MCHS 5th Gen MAGTF Wargaming Devices	A		-	-	-	-	-	0.012	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) MARINE CORPS COMMON HARDWARE SUITE (MCHS)			-	-	135.774	-	-	8.683	-	-	0.934	-	-	0.953	-	-	-	-	-	0.953
2) Formal Schools Technical Refresh (FSTR)																				
2.1) FSTR Refresh	A		-	-	-	-	-	3.275	-	-	2.634	-	-	2.689	-	-	-	-	-	2.689
2.2) FSTR Tablets/ Modernization	A		-	-	-	-	-	-	-	-	4.130	-	-	4.216	-	-	-	-	-	4.216
Subtotal: 2) Formal Schools Technical Refresh (FSTR)			-	-	0.000	-	-	3.275	-	-	6.764	-	-	6.905	-	-	-	-	-	6.905
3) MARINE CORPS ENTERPRISE INFORMATION TECHNOLOGY SERVICES (MCEITS) ⁽³⁾																				
3.1) Kansas City Sys Integration Env (SIE) Scaling	A		-	-	8.978	-	-	1.142	-	-	-	-	-	-	-	-	-	-	-	-
3.2) Kansas City Enterprise IT Center Scaling	A		-	-	9.658	-	-	0.709	-	-	-	-	-	-	-	-	-	-	-	-
3.3) Kansas City Sys Integration Env (SIE) Refresh	A		-	-	6.967	-	-	0.235	-	-	-	-	-	-	-	-	-	-	-	-
3.4) Kansas City Enterprise IT Center Refresh	A		-	-	20.353	-	-	0.465	-	-	-	-	-	-	-	-	-	-	-	-
3.5) 2nd Enterprise IT Center Procurement/ Scaling	A		-	-	20.579	-	-	0.533	-	-	-	-	-	-	-	-	-	-	-	-
3.6) 2nd Enterprise IT Center Refresh	A		-	-	1.382	-	-	0.123	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19								P-1 Line Item Number / Title: 4630 / Common Computer Resources								Aggregated Items Title: Common Computer Resources				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
3.7) Data Center Tech Refresh ⁽⁴⁾	A		-	-	-	-	-	-	-	-	15.068	-	-	18.010	-	-	-	-	-	18.010
3.8) Data Center Domain Consolidation ⁽⁵⁾	A		-	-	-	-	-	-	-	-	4.050	-	-	-	-	-	-	-	-	-
Subtotal: 3) MARINE CORPS ENTERPRISE INFORMATION TECHNOLOGY SERVICES (MCEITS)			-	-	67.917	-	-	3.207	-	-	19.118	-	-	18.010	-	-	-	-	-	18.010
4) Marine Corps Cyberspace Operations Group																				
4.1) DMSS	A		1,009.500	2	2.019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) Network Operations Infrastructure(Refresh/Upgrades) ⁽⁶⁾	A		-	-	51.331	-	-	-	-	-	3.499	-	-	-	-	-	-	-	-	-
4.3) Computer Network Defense ⁽⁷⁾	A		-	-	10.973	-	-	-	-	-	4.184	-	-	-	-	-	-	-	-	-
4.4) AltNOSC Infrastructure Upgrade	A		-	-	5.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) Command IT Refresh	A		-	-	5.723	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) Marine Corps Cyberspace Operations Group			-	-	75.746	-	-	-	-	-	7.683	-	-	-	-	-	-	-	-	-
5) Secure Operational Network Infrastructure and Communications (SONIC) ⁽⁸⁾																				
5.1) End User Devices ^{(9)(t)}	A		1.217	21,387	26.028	1.331	2,112	2.811	1.118	2,683	3.000	1.114	3,591	4.000	-	-	-	1.114	3,591	4.000
5.2) Fielding Support ⁽¹⁰⁾	A		-	-	0.289	-	-	0.642	-	-	0.254	-	-	0.268	-	-	-	-	-	0.268
5.3) Network Equipment Tech Refresh ⁽¹¹⁾	A		-	-	8.097	-	-	13.577	-	-	6.847	-	-	5.598	-	-	-	-	-	5.598
5.4) Enterprise Infrastructure Modernization (EIM) ⁽¹²⁾	A		-	-	27.546	-	-	0.537	-	-	3.000	-	-	4.080	-	-	-	-	-	4.080
5.5) Network Access Control Compliance & Remediation (NACCR) ⁽¹³⁾	A		-	-	-	-	-	3.302	-	-	0.184	-	-	-	-	-	-	-	-	-
Subtotal: 5) Secure Operational Network Infrastructure and Communications (SONIC)			-	-	61.960	-	-	20.869	-	-	13.285	-	-	13.946	-	-	-	-	-	13.946
6) MARINE CORPS INFORMATION OPERATION PROGRAM (MCIOPI)																				
6.1) Workstations	A		-	-	5.667	-	-	0.398	-	-	0.408	-	-	0.416	-	-	-	-	-	0.416

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy														Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19						P-1 Line Item Number / Title: 4630 / Common Computer Resources								Aggregated Items Title: Common Computer Resources						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: 6) MARINE CORPS INFORMATION OPERATION PROGRAM (MCIOF)			-	-	5.667	-	-	0.398	-	-	0.408	-	-	0.416	-	-	-	-	-	0.416
7) MARINE FORCES CYBER COMMAND																				
7.1) Deployable Mission Support Systems (DMSS) ⁽¹⁴⁾	A		-	-	-	-	-	10.880	-	-	13.348	-	-	-	-	-	-	-	-	-
7.2) Distributed Computing Equipment	A		-	-	3.518	-	-	1.210	-	-	-	-	-	-	-	-	-	-	-	-
7.3) Video Teleconferencing and Multi-media Equipment	A		-	-	5.946	-	-	2.026	-	-	-	-	-	-	-	-	-	-	-	-
7.4) Network Hardware	A		-	-	6.050	-	-	2.070	-	-	-	-	-	-	-	-	-	-	-	-
7.5) Telephone Equipment	A		-	-	0.230	-	-	0.080	-	-	-	-	-	-	-	-	-	-	-	-
7.6) Cable Infrastructure	A		-	-	3.612	-	-	1.230	-	-	-	-	-	-	-	-	-	-	-	-
7.7) Wireless Center IT Equipment	A		-	-	2.093	-	-	0.710	-	-	-	-	-	-	-	-	-	-	-	-
7.8) Operations Center IT Equipment	A		-	-	-	-	-	2.696	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) MARINE FORCES CYBER COMMAND			-	-	21.449	-	-	20.902	-	-	13.348	-	-	-	-	-	-	-	-	-
8) Paperless Acquisition (PA) Systems																				
8.1) WebMethod Licenses	A		-	-	3.105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) Hardware	A		-	-	-	-	-	0.122	-	-	0.124	-	-	0.127	-	-	-	-	-	0.127
Subtotal: 8) Paperless Acquisition (PA) Systems			-	-	3.105	-	-	0.122	-	-	0.124	-	-	0.127	-	-	-	-	-	0.127
9) Marine Corps Recruiting Information Support System (MCRISS)																				
9.1) Software	A		-	-	-	-	-	0.049	-	-	0.362	-	-	0.050	-	-	-	-	-	0.050
Subtotal: 9) Marine Corps Recruiting Information Support System (MCRISS)			-	-	0.000	-	-	0.049	-	-	0.362	-	-	0.050	-	-	-	-	-	0.050
10) Technology Services Organization (TSO)																				
10.1) MOL Modernization	A		-	-	-	-	-	-	-	-	-	-	-	3.000	-	-	-	-	-	3.000
10.2) Hardware	A		-	-	-	-	-	0.250	-	-	0.250	-	-	0.175	-	-	-	-	-	0.175
10.3) Laptop Refresh	A		-	-	-	-	-	0.132	-	-	0.132	-	-	0.288	-	-	-	-	-	0.288
10.4) Tech Refresh	A		-	-	-	-	-	0.468	-	-	0.231	-	-	0.234	-	-	-	-	-	0.234

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19							P-1 Line Item Number / Title: 4630 / Common Computer Resources							Aggregated Items Title: Common Computer Resources							
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	
10.5) Various Software	A		-	-	-	-	-	0.455	-	-	0.265	-	-	0.194	-	-	-	-	-	0.194	
Subtotal: 10) Technology Services Organization (TSO)			-	-	0.000	-	-	1.305	-	-	0.878	-	-	3.891	-	-	-	-	-	3.891	
11) Prior Year Cumulative																					
11.1) Prior Year	A		-	-	8.190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 11) Prior Year Cumulative			-	-	8.190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14) Professional Development																					
14.1) .EDU Infrastructure			-	-	-	-	-	-	-	-	-	-	-	1.478	-	-	-	-	-	1.478	
14.2) SNCOA	A		-	-	-	-	-	-	-	-	-	-	-	5.318	-	-	-	-	-	5.318	
Subtotal: 14) Professional Development			-	-	0.000	-	-	-	-	-	-	-	-	6.796	-	-	-	-	-	6.796	
Total			-	-	379.808	-	-	58.810	-	-	62.904	-	-	51.094	-	-	-	-	-	51.094	

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

(†) indicates the presence of a P-5a

Footnotes:

- (1) End User Device (Cost Element 1.2) funding increased from \$0.712M in FY 2019 to \$0.731M in FY 2020, a \$0.019M increase, due to the replacement End User Devices (EUDs) that are becoming non-compliant for users at MARFORK and MARFOREUR, this replacement will enable users to remain connected to the network with a fully compliant EUD. Unit costs increase from FY 2019 to FY 2020 due to inflation.
- (2) Fielding Support (Cost Element 1.6) \$0.222M will support the fielding of equipment that is procured through other customer funds. The type of support provided includes the creation of the birth record for equipment to ensure that the equipment can be accounted for in property accountability systems, along with configuring and kitting the equipment to ensure it is consistent with Marine Corps IT standards.
- (3) Funding in FY 2018 was broken into multiple cost elements for tech refresh for the Kansas City IT Center, starting in FY 2019 these cost elements will be consolidated into a singular tech refresh line.
- (4) In FY 2019, funding was consolidated into one cost element for tech refresh. Funding increased \$2.942M from FY 2019 to FY 2020, due to the refresh of servers, blades, spares which will lead to an increased capacity for the data center in Kansas City (EITC1) and Camp Lejeune (EITC2).
- (5) Funding decreased from \$10.060M in FY 2019 to \$0.000M in FY 2020 due to the completion of domain consolidation in the Kansas City IT Center (KCITC) in FY 2019.
- (6) Beginning in FY20, MCCOG funds were moved to LI 4645, Cost Element 1.3.
- (7) Beginning in FY20, MCCOG funds were moved to LI 4645, Cost Element 1.3.
- (8) Funds support regular hardware refresh and emerging hardware requirements.
- (9) End User Device (Cost Element 5.1) funding increased from \$3.000M in FY 2019 to \$4.000M in FY 2020, a \$1.000M increase, due to the replacement of additional Classified End User Devices (EUDs) enabling users to remain connected to the network with a fully compliant EUD. Replacing the aging EUDs will reduce the cybersecurity vulnerabilities arising from these items no longer receiving support or updates. If these EUDs are not replaced, it will be necessary for these users to be removed from the network to protect against cyber threats, thereby resulting in an inability to perform mission essential duties.
- (10) Fielding Support (Cost Element 5.2) funding increased from \$0.254M in FY 2019 to \$0.268M in FY 2020, a \$0.014M increase, due to increasing the quantity of 2,683 laptops procured in FY 2020 to replace aging Classified EUDs, which were procured at the beginning stages of the WIN 10 implementation. This cost element is directly related to changes in cost elements 5.1 and 5.3.
- (11) Network Equipment Tech Refresh (Cost Element 5.3) funding decreased from \$6.847M in FY 2019 to \$5.598M in FY 2020, a \$1.249M decrease, due to reprioritizing efforts from Cost Elements 5.3 to Cost Element 5.4 for the modernization of service equipment upgrading and modernizing the Classified Enterprise Service Stacks (ESS-S). This reprioritization aligns with the Marine Corps' Assured Command and Control Strategy which focuses on transforming and optimizing the Marine Corps Enterprise Network (MCEN). In addition, the equipment procured under this cost element will be replacing outdated equipment that is no longer receiving security patches or updates from the vendor, increasing cybersecurity vulnerabilities across the MCEN-S. If not replaced, these aging network devices will be removed from the network as a result of not receiving cybersecurity updates which will lead to Marine Corps users being unable to connect to the MCEN. Funding within this cost element will enable the Marine Corps to replace these aging network devices with ones that are compliant with current cybersecurity standards which will enable users across the Marine Corps to continue to operate without network disruptions.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19	P-1 Line Item Number / Title: 4630 / Common Computer Resources	Aggregated Items Title: Common Computer Resources
⁽¹²⁾ Enterprise Infrastructure Modernization Classified (EIM-S) (Cost Element 5.4) funding increased from \$3.000M in FY 2019 to \$4.080M in FY 2020, a \$1.080M increase, for the modernization of the Classified Enterprise Infrastructure. Funding under this cost element provides for upgrading and modernizing the Classified Enterprise Service Stacks (ESS-S), Classified Installation Processing Nodes CLASSIFIED (IPN-S), Classified Installation Service Node (ISN-S) and Geographically Separated Units (GSU) across the Marine Corps within the classified environment. These modernizations will support the Marine Corps' ability to migrate to the Joint Information Environment (JIE) and the cloud by increasing bandwidth, enhancing individual and organizational mobility and supporting the rapid deployment of mission critical applications and services. In addition, the migration to the cloud will result in reduced long network engineering/provision lead times. ⁽¹³⁾ Network Access Control Compliance and Remediation (Cost Element 5.5) funding decreased from \$0.184M in FY 2019 to \$0.000M in FY 2020, a \$0.184M decrease due to the completion of initial fielding of the discovery tool identifying the physical devices on the network. ⁽¹⁴⁾ Beginning in FY20, DMSS funds were moved to LI 4645, Cost Element 1.2.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19				P-1 Line Item Number / Title: 4630 / Common Computer Resources				Aggregated Items: Common Computer Resources			

Item Number / Title [DODIC]	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 (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) MARINE CORPS COMMON HARDWARE SUITE (MCHS)												
1.2) MCHS End User Devices ⁽¹⁾		2018	Various / Various	C / FFP	MCSC, Quantico, VAMCSC, Quantico, VAMCSC, Quantico	Aug 2018	Sep 2018	1,653	0.781	Y		
1.2) MCHS End User Devices ⁽¹⁾		2019 ⁽¹⁵⁾	Various / Various	C / TBD	MCSC, Quantico, VAMCSC, Quantico, VA	Aug 2019	Sep 2019	637	1.118	Y		
1.2) MCHS End User Devices ⁽¹⁾		2020	Various / Various	C / TBD	** NO PCO **	Aug 2020	Aug 2020	641	1.140	Y		
5) Secure Operational Network Infrastructure and Communications (SONIC)												
5.1) End User Devices ⁽⁹⁾		2018 ⁽¹⁶⁾	Various Vendors / Various	C / FFP	MCSC, Quantico, VA	Aug 2018	Oct 2018	2,112	1.331	Y		
5.1) End User Devices ⁽⁹⁾		2019 ⁽¹⁷⁾	Various Vendors / Various	C / FFP	MCSC, Quantico, VA	Feb 2019	Apr 2019	2,683	1.118	Y		
5.1) End User Devices ⁽⁹⁾		2020 ⁽¹⁸⁾	Various Vendors / Various	C / FFP	MCSC, Quantico, VA	Feb 2020	Apr 2020	3,591	1.114	Y		

Footnotes:

⁽¹⁵⁾ Unit cost updated to reflects updates to the current unit cost estimate to include the change from spindle drive (status quo) to solid state drive. The switch to a solid state drive will increase the reliability of end user devices.

⁽¹⁶⁾ Vendors were Dell/CDWG

⁽¹⁷⁾ Vendor will be determined when the contract is awarded in 2Q FY 2019.

⁽¹⁸⁾ Vendor will be determined when the contract is awarded in 2Q FY 2020.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)	P-1 Line Item Number / Title: 4631 / Command Post Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0506313M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	826.036	203.860	115.873	108.897	0.000	108.897	62.990	35.305	39.732	40.519	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	826.036	203.860	115.873	108.897	0.000	108.897	62.990	35.305	39.732	40.519	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	826.036	203.860	115.873	108.897	0.000	108.897	62.990	35.305	39.732	40.519	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Networking On The Move (NOTM) - Provides a command and control (C2) capability by integrating tactical data systems with on the move satellite communications (SATCOM) for beyond line-of-sight ability that allows battlefield commanders to have uninterrupted two-way access to digital data, anywhere on the battlefield. NOTM provides Marine Air-Ground Task Force (MAGTF) commanders and staffs with full Common Operational Picture (COP) access, virtually unlimited situational awareness and a powerful ability to issue digital orders (fires, maneuver, planning) to Ground Combat Element (GCE), Air Combat Element (ACE) and Logistics Combat Element (LCE) units at all echelons while on-the-move or at-the-halt. NOTM also provides Marine units the capability to link with and extend Defense Information System Network (DISN) services; SIPRNet, NIPRNet, and Defense Switched Networks (DSN). Integrated full motion video (receipt and retransmission), tactical voice communications, plus three options for secure wireless local area network (LAN) connectivity between staff members makes this capability a crucial asset to all elements of the MAGTF. Currently the USMC has three variants depending on the type of transportation being used; the NOTM Ground Combat Vehicle (GCV), NOTM Utility Task Vehicle (UTV), and NOTM Airborne (NOTM-A).

Joint Battle Command - Platform (JBC-P) Family of Systems (FoS) - JBC-P FoS is an Army led ACAT II program of Joint Requirements Oversight Council (JROC) interest formerly known as the Blue Force Tracker (BFT) FoS. It is comprised of L-Band Satellite Communications (SATCOM) and is a digital, battle command information FoS that provides integrated, on the move, timely, relevant Command and Control Situational Awareness (C2SA) information to tactical combat, combat support, and combat service support commanders, leaders, and key C2 nodes. JBC-P FoS will provide JROC mandated C2SA convergence across Combat Operations Centers (COC), ground vehicles and dismounted personnel.

Global Command and Control System - Tactical Combat Operations System (GCCS-TCO) - GCCS-TCO is the principal tool within the MAGTF for situational awareness through distribution of the Common Tactical Picture (CTP). It supports tactical operations by providing information via high speed computer systems in a timely manner and includes the Tactical COP Workstations/Servers. Procurement funding allows for system refresh and replacements to match the program's acquisition objective.

Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS) - AFATDS FoS consists of three programs: AFATDS, Back Up Computer System (BUCS), and Mobile Tactical Shelter (MTS). The AFATDS automates the fires planning, tactical fire direction, and fire support coordination required to support maneuver from the sea and subsequent operations ashore. AFATDS integrates all supporting arms assets within the MAGTF such as mortars, cannon artillery, rockets and missiles, close air support, and naval surface fire support systems. BUCS is a hand-held computer system designed to provide a backup to the AFATDS in computing ballistic firing solutions as well as provide survey and meteorological functions in support of artillery. Additionally, BUCS is the primary ballistic firing solution system during Ship To Objective Maneuver (STOM) and for the Expeditionary Fire Support System (EFSS). The MTS is a Lightweight Multi-purpose Shelter (LMS) mounted on a High Mobility Multipurpose Wheeled Vehicle (HMMWV) which protects both the AFATDS and operators from the environment. MTS enables rapid emplacement and displacement of fire support elements and provides networked communications on the move. Transition to BLI 4733 in FY19.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4631 / Command Post Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0506313M
Line Item MDAP/MAIS Code: N/A		

Target Hand-Off System (THS) - The THS addresses a Marine Corps operational requirement for a lightweight, handheld, and digital target acquisition engagement coordination system. The THS is interoperable with all Fire Support platforms and Target Locating Devices designed for the Forward Air Controllers (FACs), Forward Observers (FOs), Fire Support Teams (FSTs), Firepower Control Teams (FCTs), Tactical Air Control Parties (TACPs), and Reconnaissance Teams. The THS provides the ability to quickly acquire and digitally prosecute targets in day, night, and near-all-weather visibility conditions in order to conduct precise and rapid indirect surface fire support, Naval Surface Fire Support (NSFS), and Close Air Support (CAS). Transition to BLI 4733 in FY19.

Marine Corps Information Operation Program (MCIOP) - provides MAGTF commanders and the Marine Corps a responsive and effective full-spectrum information operations (IO) planning and psychological operations delivery capability by means of deployable support teams and a comprehensive general support IO reach-back capability in order to integrate IO into Marine Corps operations. Multiple classification levels require separate Information Technology (IT) infrastructure to support each classification level in accordance with National Security Agency and Defense Intelligence Agency standards. This includes equipment necessary for connecting internal MCIOC IT infrastructure (voice, video, and data) with the existing Marine Corps Base Quantico support infrastructure. Transition to BLI 4620 in FY19.

Combat Operations Center (COC) - The COC provides commanders with a rapidly deployable, common, modular, and scalable operational agency that facilitates command and control across the full spectrum of MAGTF operations. The AN/TSQ-239A Family of Systems (FoS) is designed to provide centralized C2 Operational Facilities (OPFAC) to collect, process, and disseminate tactical data for the commander and staff of a Marine Expeditionary Force (MEF), Division, Wing, Marine Logistics Group, Regiment, Marine Air Group, Battalion, and Squadron. The COC provides the commander with a Common Operational Picture (COP) and tactical data and communications assets needed to plan and conduct operations in an expeditionary combat environment. The system enables analytical and intuitive decision-making with a modular and scalable equipment set consisting of a common module OPFAC, C2 system, visual displays, and SW. Existing Tactical Data System software, previously resident on numerous platforms throughout the Marine Air Ground Task Force (MAGTF), have been re-hosted on the COC system to provide commanders with integrated data access and communications.

Hand Held Command and Control (H2C2) - Provides the dismounted user at the tactical edge, a handheld devices that provides integrated, on-the-move, secure, timely, and relevant Command & Control/ Situational Awareness (C2/SA) information to tactical combat, combat support and combat service support commanders, leaders, and key C2 nodes. H2C2 provides leaders with a capability for selecting, managing, and assimilating relevant data and information. This allows them to pass orders and graphics that will provide the joint warfighter the capability to visualize the commander's intent and scheme of maneuver, and provide enhanced SA of friendly, reported enemy, neutral, and civilian entities.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	202.411	113.715	106.699	-	106.699	60.014	33.026	37.401	38.141
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.449	2.158	2.198	-	2.198	2.976	2.279	2.331	2.378
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	203.860	115.873	108.897	-	108.897	62.990	35.305	39.732	40.519

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4631 / Command Post Systems				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0506313M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Command Post Systems	P-5a, P-21			- / 826.036	- / 203.860	- / 115.873	- / 108.897	- / -	- / 108.897
P-40	Total Gross/Weapon System Cost				- / 826.036	- / 203.860	- / 115.873	- / 108.897	- / 0.000	- / 108.897
*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: FY2018 Base Appropriation Request: \$203.860M (\$202.411M Active; \$1.449M Reserves) Networking On The Move (NOTM): \$117.014M (\$117.013M Active; \$0.001M Reserves) - FY18 funding supported production, procurement and fielding of the NOTM-GCV and NOTM-A. Funds also supported procurement of components and equipment for refresh and upgrades and acquisition training, and fielding efforts associated with production systems. Global Command and Control System - Tactical Combat Operations (GCCS-TCO): \$0.689M (\$0.300M Active; \$0.389M Reserves) - FY18 funding in the amount of \$2.575M was realigned to the JBC-P program to procure the Handheld End User Device (HHEUD) Early Capability Release (ECR). Funding was realigned due to the delay of technology readiness of workstations (laptops). The remaining \$0.300 in the active line and \$0.389M in the reserve line will procure technical refresh of "workstations" (laptops/clients) across the operational forces. Joint Battle Command - Platform Family of Systems (JBC-P FoS): \$41.678M Active - Increased JBCP funding of \$6.075 from PB19 to PB20 due to Marine Corps prioritized below threshold realignment of funds to procure the Handheld End User Device (HHEUD) Early Capability Release (ECR). FY18 funding continued to provide support for items such as, software and hardware integration, hardware refresh, ancillary equipment, New Equipment Training (NET) and field support, and procures mounted family of computer systems (MFCOS). Advanced Field Artillery Tactical Data Systems (AFATDS): \$10.199M Active - FY18 funds procured a modernized, common shelter that fulfills the requirements of the Mobile Tactical Shelter (MTS) and the Target Processing Set (TPS). Funds support critical hardware refresh for a laptop procurement which is essential to ensure AFATDS is windows 10 compliant. Target Hand-off System (THS): \$17.985M Active - FY18 was used to replace AN/PRC-117F radios with AN/PRC-117G radios. This upgrade enabled THS to operate on the ANW2 network providing THS digital interoperability with AFATDS and multiple air platforms. This enabled Fires Controllers to perform target acquisition, location, and digital hand-off of targets to air and ground weapon platforms. Realignment of effort to new Budget Line Item (4733) in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. Marine Corps Information Operation Program (MCIOP): \$0.110M Active - FY18 funding provided tactical server refresh. Combat Operations Center (COC): \$16.185M (\$15.126M Active; 1.059M Reserves) - FY18 funds supported the fielding of the (V)1-4 hardware refresh in support of a common hardware baseline. Funding also used to align the COC software baseline with systems currently hosted within the COC (AFATDS, CDN) in order to manage software growth and interoperability. Supporting the existing software baseline is necessary to maintain Authority To Operate (ATO) and integration with Tactical Service Oriented Architecture (TSOA), Joint Tactical Command Operations Picture (COP) Workstation (JTCW) and Command and Control Personal Computer (C2PC). FY2019 Base Appropriation Request: \$115.873M (\$113.715 Active, \$2.158 Reserves)										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4631 / Command Post Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0506313M
Line Item MDAP/MAIS Code: N/A		
Networking On The Move (NOTM): \$92.669M (\$92.662M Active; \$0.007M Reserves) - Decrease of \$24.345M from FY18 to FY19 is due to the acceleration of the NOTM-A procurement schedule. FY19 funds procure NOTM-GCV, NOTM-A systems and NOTM-GCV retrofit kits to reduce size, weight and power (SWaP). Funds will also provide component and equipment upgrades, production, fielding and training support. Global Command and Control System - Tactical Combat Operations (GCCS-TCO): \$0.380M Active -Decrease of \$0.309M funding from FY18 to FY19 aligns to procurement schedule and decrease of reserve funding due to planned completion of tech refresh. FY19 funding procures a 3yr JavaBeans Open Source Software (JBOSS) software subscription for the Tactical Common Operational Picture (COP) Servers (TCS) which is required for the TCS 6.X software baseline and deployed across the operational forces. Joint Battle Command - Platform Family of Systems (JBC-P FoS): \$17.056M Active - Decrease of \$24.622M from FY18 to FY19 is aligned to the schedule for HHEUD, MFoCS, hardware refresh, and associated fielding support. FY19 funds continues support for items such as, software and hardware integration, hardware refresh, ancillary equipment, NET and field support, and procures Mounted Family of Computer Systems (MFoCS). Combat Operations Center (COC): \$5.768M (\$3.617M Active; \$2.151M Reserves) - FY19 funds required for hardware refresh supporting existing software baseline. FY2020 Base Appropriation Request: \$108.897 (\$106.699M Active, \$2.198M Reserve) The FY2020 Base funding request decreases from FY 2019 by \$6.976 million primarily due to the completion of 69% of the AAO for three variants (Ground Combat Vehicle, NOTM Airborne and Utility Task Vehicle) of the Networking on the Move systems. Networking on the Move (NOTM): \$79.373M (\$79.359M Active, \$0.014M Reserve) - The decrease of \$13.296M from FY19 to FY20 is based on the procurement schedule for the NOTM-GCV and completion of the NOTM-A. FY20 funding will procure NOTM GCV systems, NOTM-A modification kits and NOTM UTV systems. FY20 funding will also support acquisition, fielding, and training requirements associated with production systems. Global Command and Control System - Tactical Combat Operations (GCCS-TCO): \$1.409M Active - The increase of \$1.029M from FY19 to FY20 will fund technical refresh to align with the procurement schedule. FY20 funds will be used to procure Tactical COP Servers (TCS) and Tactical COP Workstations for the replenishment of currently fielded systems due to harsh field environment and obsolescence. Joint Battle Command - Platform Family of Systems (JBC-P FoS): \$8.159M Active - The decrease of \$8.897M from FY19 to FY20 reflects the reduction of MFoCS hardware refresh rate of legacy systems and the HW/SW Integration, New Equipment Training, and Fielding Support to other ground platforms. FY20 funding supports JLTV availability and will continue support for items such as, software and hardware integration, hardware refresh, ancillary equipment, NET and field support, and it will procure Mounted Family of Computer Systems (MFoCS). FY20 funding request is in accordance with the JBC-P hardware refresh cyclethat occurs every two years (i.e. FY18, FY20). Combat Operations Center (COC): \$8.440M (\$6.256M Active, \$2.184M Reserves) - Increase of \$2.672M from FY19 to FY20 will support refresh procurement. FY20 funds will be required for hardware refresh activities in support of a common hardware baseline. Funding will also be used to align the COC software and hardware baseline with systems currently hosted within the COC in order to manage software growth and interoperability. Supporting the existing software baseline is necessary to maintain Authority To Operate (ATO) and integration with Tactical Service Oriented Architecture (TSOA), Joint Tactical Command Operational Picture (COP) Workstation (JTCW), and Command and Control Personal Computer (C2PC). Handheld Command and Control (H2C2): \$11.516M Active - The increase of \$11.516M from FY19 to FY20 procures 1250 systems required to maintain Command and Control while operating in austere environments. FY20 funds will procure the Dismounted Handheld Systems. Prior to FY20 the H2C2 effort was captured under the JBCP-FoS Handheld End User Device Early Capability Release. OCO:		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4631 / Command Post Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0506313M
Line Item MDAP/MAIS Code: N/A		
FY2018 Overseas Contingency Operations (OCO) Request: \$5.777M Advanced Field Artillery Tactical Data Systems (AFATDS): \$0.177M - FY18 OCO funds will procure replacement assets pulled from artillery units to be prepositioned on ships. Networking on the Move (NOTM): \$5.600M - FY18 OCO will support NOTM systems equipment procurement.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19									P-1 Line Item Number / Title: 4631 / Command Post Systems						Aggregated Items Title: Command Post Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) MCIOP																				
1.1) Tactical Server Refresh	A		-	-	1.247	-	-	0.110	-	-	-	-	-	-	-	-	-	-	-	-
1.2) FABS	A		-	-	1.383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) MCIOP			-	-	2.630	-	-	0.110	-	-	-	-	-	-	-	-	-	-	-	-
2) AFATDS																				
2.1) Fielding Support			-	-	8.319	-	-	0.800	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Mobile Tactical Shelter Modernization	A		-	-	43.490	-	-	4.859	-	-	-	-	-	-	-	-	-	-	-	-
2.3) Hardware Refresh - Active	A		-	-	9.273	-	-	3.533	-	-	-	-	-	-	-	-	-	-	-	-
2.4) Ancillary Hardware Components	A		-	-	3.387	-	-	1.007	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) AFATDS			-	-	64.469	-	-	10.199	-	-	-	-	-	-	-	-	-	-	-	-
3) THS																				
3.1) Hardware Refresh	A		-	-	10.200	-	-	14.574	-	-	-	-	-	-	-	-	-	-	-	-
3.2) Hardware/ Software Integration	A		-	-	3.771	-	-	3.411	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) THS			-	-	13.971	-	-	17.985	-	-	-	-	-	-	-	-	-	-	-	-
4) JBC-P																				
4.1) Mounted Family of Computer Systems (MFoCS)	A		-	-	31.448	-	-	12.657	-	-	2.932	-	-	2.476	-	-	-	-	-	2.476
4.2) Ancillary Hardware Components	A		-	-	5.430	-	-	2.931	-	-	0.500	-	-	0.500	-	-	-	-	-	0.500
4.3) Hardware/ Software Integration, NET and Fielding Support			-	-	23.421	-	-	5.675	-	-	4.659	-	-	2.194	-	-	-	-	-	2.194
4.4) Hardware Refresh ⁽¹⁾	A		-	-	-	-	-	6.558	-	-	-	-	-	1.006	-	-	-	-	-	1.006
4.5) Handheld End User Device (HHEUD) Early Capability Release (ECR)	A		-	-	4.954	-	-	13.857	-	-	-	-	-	-	-	-	-	-	-	-
4.7) Joint Light Tactical Vehicle (JLTV) B-Kits	A		-	-	-	-	-	-	-	-	8.965	-	-	1.983	-	-	-	-	-	1.983
Subtotal: 4) JBC-P			-	-	65.253	-	-	41.678	-	-	17.056	-	-	8.159	-	-	-	-	-	8.159
5) GCCS-TCO																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19								P-1 Line Item Number / Title: 4631 / Command Post Systems							Aggregated Items Title: Command Post Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
5.1) Refresh-Reserves	A		-	-	0.591	-	-	0.389	-	-	-	-	-	-	-	-	-	-	-	-
5.2) Hardware/Software Refresh ⁽²⁾	A		-	-	15.826	-	-	0.300	-	-	0.380	-	-	1.409	-	-	-	-	-	1.409
Subtotal: 5) GCCS-TCO			-	-	16.417	-	-	0.689	-	-	0.380	-	-	1.409	-	-	-	-	-	1.409
6) NOTM																				
6.1) NOTM Reserves Refresh	A		-	-	-	-	-	0.001	-	-	0.007	-	-	0.014	-	-	-	-	-	0.014
6.2) Program and Systems, Support, Fielding, & Training	A		-	-	23.340	-	-	6.542	-	-	6.316	-	-	7.670	-	-	-	-	-	7.670
6.3) System Refresh/Equipment Upgrades ⁽³⁾	A		-	-	33.403	-	-	32.301	-	-	19.598	-	-	11.969	-	-	-	-	-	11.969
6.4) Ground Combat Vehicles (GCV) Systems ^{(4)(t)}	A		1,500K	23	34.500	1,507K	20	30.140	1,507K	24	36.168	1,507K	15	22.605	-	-	-	1,507K	15	22.605
6.5) NOTM Airborne (NOTM-A) Systems ^{(5)(t)}	A		1,529K	10	15.290	1,529K	18	27.522	1,529K	20	30.580	-	-	-	-	-	-	-	-	-
6.6) NOTM Airborne Modification Kits ^{(6)(t)}	A		397,500.00	2	0.795	379,777.00	54	20.508	-	-	-	379,777.00	24	9.115	-	-	-	379,777.00	24	9.115
6.7) NOTM Utility Task Vehicle (UTV) Systems ^{(7)(t)}	A		-	-	-	-	-	-	-	-	-	1,120K	25	28.000	-	-	-	1,120K	25	28.000
Subtotal: 6) NOTM			-	-	107.328	-	-	117.014	-	-	92.669	-	-	79.373	-	-	-	-	-	79.373
7) COC																				
7.1) Program Management Support (V)1-4			-	-	0.126	-	-	2.051	-	-	2.176	-	-	2.270	-	-	-	-	-	2.270
7.2) COC Refresh ⁽⁸⁾	A		-	-	1.357	-	-	13.075	-	-	1.441	-	-	3.986	-	-	-	-	-	3.986
7.3) Reserves COC Refresh	A		-	-	0.620	-	-	1.059	-	-	2.151	-	-	2.184	-	-	-	-	-	2.184
Subtotal: 7) COC			-	-	2.103	-	-	16.185	-	-	5.768	-	-	8.440	-	-	-	-	-	8.440
8) H2C2																				
8.1) Dismounted Handheld Systems ^{(9)(t)}	A		-	-	-	-	-	-	-	-	-	9,210.00	1,250	11.513	-	-	-	9,210.00	1,250	11.513
8.2) Program Management Support	A		-	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	0.003
Subtotal: 8) H2C2			-	-	0.000	-	-	-	-	-	-	-	-	11.516	-	-	-	-	-	11.516
9) Prior Year Cumulative Funding																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19						P-1 Line Item Number / Title: 4631 / Command Post Systems									Aggregated Items Title: Command Post Systems						
Item Number / Title [DODIC]		ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
				Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
9.1) Prior Year Cumulative Funding		A		-	-	553.865	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 9) Prior Year Cumulative Funding				-	-	553.865	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total				-	-	826.036	-	-	203.860	-	-	115.873	-	-	108.897	-	-	-	-	-	108.897

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

(†) indicates the presence of a P-5a

Footnotes:

- (1) FY20 funding request is in accordance with the JBC-P hardware refresh cycle that occurs every two years (i.e. FY18, FY20).
- (2) FY20 Increase of \$1.029M supports procurement of Tactical COP Servers (TCS) and Tactical COP Workstations refresh.
- (3) NOTM Systems Refresh/Equipment Upgrades is for various components with varying quantities and prices.
- (4) Decrease of \$13.563M from FY19 to FY20 reflects procurement quantity reduction.
- (5) Decrease of \$30.580M from FY19 to FY20 reflects completion of NOTM-A system procurement in FY19.
- (6) Increase of \$9.115M from FY19 to FY20 reflects procurement of NOTM A modification kits.
- (7) Increase of \$28.000M from FY19 to FY20 reflects initial procurement of NOTM UTV systems.
- (8) COC: FY20 increase of \$2.672M supports system technical refresh consisting of multiple components.
- (9) The increase of \$11.513M from FY19 to FY20 procures 1250 systems required to maintain Command and Control while operating in austere environments. FY20 funds will procure the Dismounted Handheld Systems. Prior to FY20 the H2C2 effort was captured under the JBCP-FoS Handheld End User Device Early Capability Release.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19			P-1 Line Item Number / Title: 4631 / Command Post Systems						Aggregated Items: Command Post Systems			
Item Number / Title [DODIC]	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
6) NOTM												
6.4) Ground Combat Vehicles (GCV) Systems ^{(4)(†)}		2016	SSC Atlantic / Charleston, SC	C / TBD	** NO PCO **	Oct 2015	Jan 2016	6	1,500K	N	Jan 2016	
6.4) Ground Combat Vehicles (GCV) Systems ^{(4)(†)}		2017	Defense Logistic Agency / Philadelphia, PA	Various	Philadelphia, PA	Sep 2017	Jun 2018	17	1,500K	Y		
6.4) Ground Combat Vehicles (GCV) Systems ^{(4)(†)}		2018	Defense Logistic Agency / Philadelphia, PA	Various	Philadelphia, PA	Jun 2018	Dec 2018	20	1,507K	N	Jan 2018	
6.4) Ground Combat Vehicles (GCV) Systems ^{(4)(†)}		2019	Defense Logistic Agency / Philadelphia, PA	Various	Philadelphia, PA	Feb 2019	Jun 2019	24	1,507K	N	Sep 2018	
6.4) Ground Combat Vehicles (GCV) Systems ^{(4)(†)}		2020	Defense Logistic Agency / Philadelphia, PA	Various	Philadelphia, PA	Jun 2020	Sep 2020	15	1,507K	N	Oct 2020	
6.5) NOTM Airborne (NOTM-A) Systems ^{(5)(†)}		2015	ViaSat Inc.@Carlsbad, CA / Carlsbad, CA	C / TBD	** NO PCO **	Oct 2014	Dec 2014	4	1,529K	Y		
6.5) NOTM Airborne (NOTM-A) Systems ^{(5)(†)}		2016	ViaSat Inc.@Carlsbad, CA / Carlsbad, CA	Various	Philadelphia, PA	Sep 2016	Nov 2016	6	1,529K	N	Apr 2016	
6.5) NOTM Airborne (NOTM-A) Systems ^{(5)(†)}		2018 ⁽¹⁰⁾	ViaSat Inc.@Carlsbad, CA / Carlsbad, CA	Various	Philadelphia, PA	Apr 2018	Jun 2018	18	1,529K	Y		
6.5) NOTM Airborne (NOTM-A) Systems ^{(5)(†)}		2019	ViaSat Inc.@Carlsbad, CA / Carlsbad, CA	Various	Philadelphia, PA	Mar 2019	May 2019	20	1,529K	Y		
6.6) NOTM Airborne Modification Kits ^{(6)(†)}		2018	ViaSat Inc. / Carlsbad, CA	C / FFP	** NO PCO **	Apr 2018	Oct 2018	54	379,777.00	N		
6.6) NOTM Airborne Modification Kits ^{(6)(†)}		2020	ViaSat Inc. / Carlsbad, CA	C / FFP	** NO PCO **	Nov 2019	May 2020	24	379,777.00	N		
6.7) NOTM Utility Task Vehicle (UTV) Systems ^{(7)(†)}		2020	Defense Logistic Agency / Philadelphia, PA	Various	Philadelphia, PA	Jul 2020	Mar 2021	25	1,120K	N		
8) H2C2												
8.1) Dismounted Handheld Systems ^{(9)(†)}		2020	TBD / TBD	MIPR	ARMDEC, AL	Sep 2020	Mar 2021	1,250	9,210.00	N	Sep 2020	Jan 2020
^(†) indicates the presence of a P-21 Footnotes: ⁽¹⁰⁾ Additional (8) systems from Congressional Add.												

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LI 4631 - Command Post Systems
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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19										P-1 Line Item Number / Title: 4631 / Command Post Systems														Aggregated Items: Command Post Systems																
Items (Units in Each)							Fiscal Year 2017														Fiscal Year 2018														BALANCE					
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017														Calendar Year 2018																			
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP										
6) NOTM																																								
6.4) Ground Combat Vehicles (GCV) Systems ⁽⁴⁾																																								
21	2016	NAVY		6	6	0																										0								
22	2017	NAVY		17	0	17															A -	-	-	-	-	-	-	-	-	-	1	2	2	2	10					
22	2018	NAVY		20	0	20																										A -	-	-	-					20
22	2019	NAVY		24	0	24																														24				
22	2020	NAVY		15	0	15																														15				
6.5) NOTM Airborne (NOTM-A) Systems ⁽⁵⁾																																								
23	2015	NAVY		4	4	0																										0								
23	2016	NAVY		6	0	6	-	2	2	2																						0								
23	2018	NAVY		18	0	18																										A -	-	1	2	2	2	11		
23	2019	NAVY		20	0	20																														20				
6.6) NOTM Airborne Modification Kits ⁽⁶⁾																																								
Prior Years Deliveries: 2																																								
24	2018	NAVY		54	0	54																										A -	-	-	-	-	-	54		
24	2020	NAVY		24	0	24																														24				
6.7) NOTM Utility Task Vehicle (UTV) Systems ⁽⁷⁾																																								
25	2020	NAVY		25	0	25																														25				
8) H2C2																																								
8.1) Dismounted Handheld Systems ⁽⁹⁾																																								
26	2020	NAVY		1,250	0	1,250																														1,250				
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP										

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19										P-1 Line Item Number / Title: 4631 / Command Post Systems										Aggregated Items: Command Post Systems									

Items (Units in Each)						Fiscal Year 2019												Fiscal Year 2020												B A L A N C E											
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2018	BAL DUE AS OF 1 OCT				Calendar Year 2019												Calendar Year 2020																			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P										
6) NOTM																																									
6.4) Ground Combat Vehicles (GCV) Systems ⁽⁴⁾																																									
	21	2016	NAVY		6	6	0																										0								
	22	2017	NAVY		17	7	10	2	2	2	2	2											0																		
	22	2018	NAVY		20	0	20	-	-	2	2	2	2	1	2	2	2	2	1											0											
	22	2019	NAVY		24	0	24	A -				-	-	-	-	2	3	2	2	3	2	1	3	2	2	2						0									
	22	2020	NAVY		15	0	15																					A -	-	-	-	2						13			
6.5) NOTM Airborne (NOTM-A) Systems ⁽⁵⁾																																									
	23	2015	NAVY		4	4	0																										0								
	23	2016	NAVY		6	6	0																										0								
	23	2018	NAVY		18	7	11	2	2	2	2	2	1																			0									
	23	2019	NAVY		20	0	20	A -				-	2	2	2	2	2	2	2	2	2						0														
6.6) NOTM Airborne Modification Kits ⁽⁶⁾																																									
Prior Years Deliveries: 2																																									
	24	2018	NAVY		54	0	54	4	4	4	4	4	5	5	5	5	5	5	4														0								
	24	2020	NAVY		24	0	24																A -	-	-	-	-	-	-	2	2	2	2	2	14						
6.7) NOTM Utility Task Vehicle (UTV) Systems ⁽⁷⁾																																									
	25	2020	NAVY		25	0	25																										A -	-	-						25
8) H2C2																																									
8.1) Dismounted Handheld Systems ⁽⁹⁾																																									
	26	2020	NAVY		1,250	0	1,250	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	A -	1,250								

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LI 4631 - Command Post Systems
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Exhibit P-21, Production Schedule: PB 2020 Navy							Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19				P-1 Line Item Number / Title: 4631 / Command Post Systems			Aggregated Items: Command Post Systems

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	SSC Atlantic - Charleston, SC		23	40	0	0	7	7	0	0	3	3
2	Defense Logistic Agency - Philadelphia, PA		23	40	0	0	3	3	0	0	3	3
3	ViaSat Inc.@Carlsbad, CA - Carlsbad, CA		20	20	0	0	2	2	0	0	2	2
4	ViaSat Inc. - Carlsbad, CA		37	37	0	0	6	6	0	0	6	6
5	Defense Logistic Agency - Philadelphia, PA		25	25	0	0	8	8	0	0	8	8
6	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: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)							P-1 Line Item Number / Title: 4633 / Radio Systems					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0605873M, 0506313M				
Line Item MDAP/MAIS Code: 000												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	642.940	28.361	251.412	227.320	0.000	227.320	367.728	515.122	531.512	538.916	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	642.940	28.361	251.412	227.320	0.000	227.320	367.728	515.122	531.512	538.916	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	642.940	28.361	251.412	227.320	0.000	227.320	367.728	515.122	531.512	538.916	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.205	0.207	-	-	-	-	-	-	-	-	0.412
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: This budget line item procures radios, radio systems, satellite communications systems, and associated equipment. Global Broadcast Service (GBS): GBS is a smart-push/user-pull Satellite Communication (SATCOM) system that provides large volumes of information to deployed, or garrison forces. The AN/TSR-9 and AN/TSR-11 receives and disseminates GBS broadcasts at up to 45 Mbps, and is capable of processing both classified and unclassified information products such as: imagery, intelligence, video (NTSC and Digital), theater message traffic, Joint and service-unique news, weather and MWR programming. Each Transportable Ground Receive Suite (TGRS) consists of a Receive Terminal (including a 1-meter parabolic dish antenna), Receive Broadcast Manager Server, Power Controller Unit, Crypto Device (KG-250), Integrated Receiver-Decoder (for NTSC video), Managed Ethernet Switch, Unmanaged Ethernet Switch, Video Converter, and transit cases. The Portable Receive Suite (PRS) is a man-portable ground station single enclave (Classified or Unclassified) receive suite. The PRS can be connected to a LAN with the addition of a user supplied Ethernet switch. The PRS receives information products broadcasted through the Global Broadcast Service (GBS) via the Ka-band transponders via the Wideband Global SATCOM (WGS) satellites' Ka-band downlink transponders. Very Small Aperture Terminal (VSAT): The VSAT Family of Systems (FoS) provides wideband, beyond-line-of-sight (BLOS), low-cost satellite communications to Marine Air-Ground Task Force (MAGTF) commanders from the Major Subordinate Command to Battalion levels. The VSAT FoS provides the RF communications link in support of the transfer of voice, video, and data services. Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): SMART-T provides tactical users with protected data and voice via Advanced Extremely High Frequency (AEHF) satellite communications. The SMART-T system is transported on High Mobility Multipurpose Wheeled Vehicles (HMMWVs), providing MAGTF Commanders a secure, survivable, long-haul, low/medium data rate communications link not subject to terrain masking and horizon limitations. The SMART-T is the only USMC asset that possesses a SATCOM AEHF capability. Military Global Positioning System (GPS) User Equipment (MGUE) (formerly DAGR): The MGUE is a small-form-factor or handheld receiver that is a self-contained device capable of independently providing the user or external system interface, with positioning, velocity, navigation, and precise time information derived from the GPS precise positioning service (PPS). MGUE activities incorporate incremental approach to meet requirements. Increment I focuses on integration of GPS capabilities into Ground Platforms and Increment II focuses on the next generation Handheld (DAGR) replacement. These increments are phased across the FYDP with Inc I occurring FY17-21 and Inc II occurring FY21-25. Tactical Communications Modernization (TCM): TCM addresses the requirements to enhance, replace, and sustain tactical												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4633 / Radio Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0605873M, 0506313M
Line Item MDAP/MAIS Code: 000		
radios while achieving interoperability and minimizing the affects of equipment obsolescence. TCM enables Command and Control (C2) and situational awareness at all echelons and elements of the MAGTF. TCM provides for Line of Sight (LOS), Beyond Line of Sight (BLOS) secure voice, and data, operating in frequency bands from 1.6MHz to 2.5GHz. TCM procurements enable joint interoperability, mobile networking, and support National Security Agency (NSA) Communications Security (COMSEC) Modernization requirements down to the squad level. Terrestrial Wideband Transmission Systems (TWTS): TWTS is a capabilities portfolio that provides the Marine Air Ground Task Force (MAGTF) with a continued capability of secure terrestrial digital data transmission. The portfolio includes, the Army/Navy Transportable Radio Communications-170A (AN/TRC-170A) Beyond Line of Sight (BLOS) systems and their replacement Next Generation Troposcatter (NGT). The AN/MRC-142 and the Wireless Point to Point Link (WPPL) Line of Sight (LOS) systems and their replacement called the LOS Replacement (LOS-R), Tactical Elevated Antenna Mast (TEAMS), and Free-Space Optics (FSO) system. The NGT capability will provide a high bandwidth communications data link to support remote locations where satellite communication is not available. The LOS-R capability will provide a digital wideband full duplex link between operating units ashore and units aboard amphibious ships via the Navy's Automated Data Network System (ADNS) to meet ship-to-shore and shore-to-shore communication requirements. FSO is designed to provide additional LOS transmission diversity with an optical line-of-sight transmission path with a Low Probability of Detection/Low Probability of Intercept (LPD/LPI).		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4633 / Radio Systems				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0605873M, 0506313M				
Line Item MDAP/MAIS Code: 000										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Radio Systems	P-5a, P-21			- / 642.940	- / 28.361	- / 251.412	- / 227.320	- / -	- / 227.320
P-40	Total Gross/Weapon System Cost				- / 642.940	- / 28.361	- / 251.412	- / 227.320	- / 0.000	- / 227.320
*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: FY2018 Base Appropriation Request: \$28.361M Global Broadcast Service (GBS): \$.990M - Funding procured hardware to support planned tech refresh efforts. Very Small Aperture Terminal (VSAT): \$7.044(\$2.454M Base; \$4.590M OCO) - Base funding enabled the procurement and integration of the VSAT-L external antenna effort, and refresh and upgrade of components which are end-of-life/end-of-support such as server upgrades; as well as fielding and program support. OCO funding procured an additional (10) VSAT-E Rapid Response Kits (RRKs) to support High Demand/Low Density equipment employed by forward units to include the Special Purpose-Marine Air Ground Task Forces, Marine Expeditionary Units, and Marine Expeditionary Brigades. Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): \$.549M - Funding allocated to procure tech refresh components, such as electro actuator, elevation motor, and transceiver, to mitigate end of life/end of sale and obsolescence issues until NEXGEN AEHF solution is identified. Tactical Communications Modernization (TCM): \$19.718M - Funding provided for the procurement of Mobile User Objective System (MUOS) capability to include antennas, procurement of Application Program Set (APS) to support TCM's family of systems (FoS) maintenance, and additional ancillary components and program support. Terrestrial Wideband Transmission Systems (TWTS): \$.060M - Funding procured Program Office Management Support. PB19 to PB20 change resulted from delays in Next Generation Tropo development and subsequent acquisition strategy change to award a Marine Corps contract. FY2019 Base Appropriation Request: \$251.412M Global Broadcast Service (GBS): \$1.815M - Funding procures planned hardware tech refresh efforts to mitigate obsolescence issues. Increase of \$.825M from FY18 to FY19 will support tech refresh efforts such as crypto modernization. Very Small Aperture Terminal (VSAT): \$7.567M - Funding provides for system tech refreshes and upgrades to continue mitigation of end-of-life/end-of-support and obsolescence issues; and program support. Increase of \$5.113M from FY18 to FY19 will support procurement and integration of tech refresh components such as the Master Reference Terminal (MRT), servers, and switches. Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): \$.571M - Funding allocated to procure tech refresh components, such as digital transmitter, convertors, and synthesizers, to mitigate end of life/end of sale and obsolescence issues until NEXGEN AEHF solution is identified. Funding also provided for program support. Military Global Positioning System (GPS) User Equipment (MGUE): \$.531M - Funding supports transition from DAGR to MGUE adding the capability of M-Code. Increase of \$.531M from FY18 to FY19 reflects the procurement of MGUE, procurement of ancillary components, and program support.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4633 / Radio Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0605873M, 0506313M
Line Item MDAP/MAIS Code: 000		
Tactical Communications Modernization (TCM): \$204.285M - Funds continue to provide for procurement of multiple families of radio systems which support the primary voice and data communication requirements for the operational forces, fielding requirements, and program support. Increase of \$184.567M will support completion of the MUOS FW and MUOS antenna procurements, procurement of High Frequency Radio II (HFR II) capabilities (\$116.342M), and initial Multi-Channel Man Pack (MCMP) capabilities (\$7.500M). The MUOS FW capability and MUOS antennas (\$75.020M) replaces aging Ultra High Frequency (UHF) tactical satellite capabilities. HFR II replaces aging legacy HFR radios to meet the National Security Agency (NSA) mandate for Communications Security (COMSEC) modernization with approved cryptographic products. MCMP replaces legacy single channel radios which do not currently provide ultra high-frequency SATCOM capability and are required to be replaced due to the NSA mandate for COMSEC modernization. Remaining funds (\$5.423M) support ancillary components and program production and fielding support. Terrestrial Wideband Transmission System (TWTS): \$36.643M - Funding supports procurement of 30 NGT assets (\$36M) and system data. NGT replaces the AN/TRC 170A system that is facing severe diminishing manufacturing sources and material shortages (DMSMS) and will provide a C and X band alternative satellite communication frequencies. PB19 to PB20 changes resulted from an acquisition strategy change. The program was initially structured to procure C band systems from an Army contract and X band system from a USMC contract; however, the Army's systems did not meet the USMC requirements. Therefore the program was restructured to procure a combined C and X band solution via one contract in order to meet USMC requirements. In addition, funds (\$.643M) will fund program support. Increase from FY19 to FY20 supports procurement of 30 NGT systems and program support efforts. FY2020 Base Appropriation Request: \$227.320M Global Broadcast Service (GBS): \$1.764M - Funding will procure hardware to support planned tech refresh efforts and programmatic support. Decrease of \$0.049M from FY2019 to FY2020 is due to the completion of crypto modernization. Very Small Aperture Terminal (VSAT): \$15.957M - Funding will enable the procurement of 42 VSAT-Medium Refresh terminals and spares which will replace the legacy VSAT-M terminals to address obsolescence issues and programmatic support. Increase of \$8.392M from FY19 to FY20 will support procurement of the terminals, and the production of logistics and engineering products. Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): \$.000M - Decrease from FY19 to FY20 of \$0.571 reflects the elimination of funding to better align with the National Defense Strategy. Military Global Positioning System (GPS) User Equipment (MGUE): \$7.965M - Funding will support transition from DAGR to MGUE, adding to the M-Code capability. Increase of \$7.434M from FY19 to FY20 reflects initial procurement of Increment I cards to integrate into various platforms, procurement of ancillary components, and program support. Tactical Communications Modernization (TCM): \$164.165M - Funding will continue to provide for the procurement of multiple families of radio systems which support the primary voice and data communication requirements for the operational forces. Funding will support procurement of High Frequency Radio II (HFR II) capabilities, Multi-Channel Man Pack (MCMP) capabilities, Multi-Channel Handheld (MCHH) capabilities and spares for radio systems, fielding support, and other ancillaries. HFR II replaces aging legacy HFR radios to meet the National Security Agency (NSA) mandate for Communications Security (COMSEC) modernization with approved cryptographic products. Multi-Channel Radio family of systems (MCR FoS), MCMP and MCHH, replaces legacy single channel radios that do not meet the NSA mandate for COMSEC modernization. Decrease of \$40.120M due to completion of MBR II MUOS procurement. CE.5.6. unit cost increase of \$5k from FY19 to FY20 is due to the cost estimate for MCMP and additional capabilities e.g. Waveforms. The quantity increase from FY19 to FY20 is due to the planned schedule procurement of MCMP AAO completion in FY20. Terrestrial Wideband Transmission System (TWTS): \$37.469M - Funding supports procurement of LOS-R radios, ancillary components, and masts as well as engineering and program support for the TWTS portfolio. The LOS-R radio procurement enables the Marine Corps to mitigate sustainment issues and readiness concerns due to component obsolescence and end-of-life/end-of-sale (EOL/EOS) of the AN/MRC-142 and WPPL-T. The LOS-R system ensures interoperability with the Navy and is compatible with the Army's TRILOS system. Increase of \$.826M from FY19 to FY20 supports LOS-R program initiation shift from FY19 to FY20.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19								P-1 Line Item Number / Title: 4633 / Radio Systems							Aggregated Items Title: Radio Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Global Broadcast Service (GBS)																				
1.1) Program /Training Support			-	-	1.066	-	-	0.888	-	-	0.655	-	-	0.667	-	-	-	-	-	0.667
1.2) Fielding Support			-	-	0.195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.3) PRS 11	A		94,238.10	21	1.979	-	-	0.102	-	-	-	-	-	-	-	-	-	-	-	
1.4) Tech Refresh	A		-	-	0.709	-	-	-	-	-	1.160	-	-	1.097	-	-	-	-	1.097	
1.5) TSR-11 ^(†)	A		145,000.00	8	1.160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.6) TSR 11 Retrofit ^(†)	A		60,000.00	92	5.520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.7) TSR 11 Retrofit (Reserves) ^(†)	A		60,000.00	5	0.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 1) Global Broadcast Service (GBS)			-	-	10.929	-	-	0.990	-	-	1.815	-	-	1.764	-	-	-	-	-	1.764
2) Very Small Aperture Terminal (VSAT)																				
2.1) Logistics/Fielding/ Training Support			-	-	0.415	-	-	0.314	-	-	2.722	-	-	0.958	-	-	-	-	-	0.958
2.2) VSAT Tech Refresh and Upgrade	A		-	-	6.427	-	-	2.140	-	-	4.845	-	-	-	-	-	-	-	-	
2.3) VSAT-M Refresh Terminal ^{(1)(†)}	A		-	-	-	-	-	-	-	-	-	302,000.00	42	12.684	-	-	-	302,000.00	42	12.684
2.4) VSAT-M Refresh Ancillary ⁽²⁾	A		-	-	-	-	-	-	-	-	-	-	-	2.315	-	-	-	-	2.315	
2.7) VSAT-E Rapid Response Kit (RRK) Systems (OCO) ^(†)	A		-	-	-	459,000.00	10	4.590	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 2) Very Small Aperture Terminal (VSAT)			-	-	6.842	-	-	7.044	-	-	7.567	-	-	15.957	-	-	-	-	-	15.957
3) Secure Mobile Anti-Jam Reliable Tactical - Terminal (SMART-T)																				
3.1) Tech Refresh ⁽³⁾	A		-	-	0.779	-	-	0.549	-	-	0.552	-	-	-	-	-	-	-	-	
3.2) Program Support ⁽⁴⁾	A		-	-	5.064	-	-	-	-	-	0.019	-	-	-	-	-	-	-	-	
Subtotal: 3) Secure Mobile Anti-Jam Reliable Tactical - Terminal (SMART-T)			-	-	5.843	-	-	0.549	-	-	0.571	-	-	-	-	-	-	-	-	-
4) Military GPS User Equipment (MGUE)																				
4.1) Ancillary Components (cables, power adapters, etc) ⁽⁵⁾	A		-	-	1.469	-	-	-	-	-	0.180	-	-	3.777	-	-	-	-	3.777	
4.2) MGUE ECPs	A		-	-	-	-	-	-	-	-	0.170	-	-	1.436	-	-	-	-	1.436	
4.3) Engineering/ Program Support			-	-	-	-	-	-	-	-	0.181	-	-	2.752	-	-	-	-	2.752	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19							P-1 Line Item Number / Title: 4633 / Radio Systems							Aggregated Items Title: Radio Systems						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 4) Military GPS User Equipment (MGUE)			-	-	1.469	-	-	-	-	-	0.531	-	-	7.965	-	-	-	-	-	7.965
5) Tactical Communications Modernization (TCM)																				
5.1) Engineering & Program Support			-	-	37.740	-	-	2.335	-	-	2.976	-	-	2.094	-	-	-	-	-	2.094
5.2) TCM Fielding Support			-	-	-	-	-	-	-	-	0.610	-	-	0.554	-	-	-	-	-	0.554
5.3) Ancillary Components ⁽⁶⁾	A		-	-	6.654	-	-	1.858	-	-	1.837	-	-	2.918	-	-	-	-	-	2.918
5.4) MBR II MUOS ^{(7)(t)}	A		9,673.33	150	1.451	9,676.00	850	8.225	8,817.05	6,977	61.517	-	-	-	-	-	-	-	-	-
5.5) MUOS Antennas ^{(8)(t)}	A		-	-	-	3,372.00	2,165	7.300	3,102.70	4,352	13.503	-	-	-	-	-	-	-	-	-
5.6) MCMP ^{(9)(t)}	A		-	-	-	-	-	-	50,000.00	150	7.500	55,000.00	1,414	77.770	-	-	-	55,000.00	1,414	77.770
5.8) HFR II VRC ^{(10)(t)}	A		-	-	-	-	-	-	-	-	-	68,000.00	100	6.800	-	-	-	68,000.00	100	6.800
5.9) HFR II MRC ^{(11)(t)}	A		-	-	-	-	-	-	-	-	-	68,000.00	100	6.800	-	-	-	68,000.00	100	6.800
5.10) HFR II TRC ^{(12)(t)}	A		-	-	-	-	-	-	-	-	-	73,000.00	100	7.300	-	-	-	73,000.00	100	7.300
5.11) HFR II Manpack ^{(13)(t)}	A		-	-	-	-	-	-	27,926.50	4,166	116.342	-	-	-	-	-	-	-	-	-
5.12) MCHH ^{(14)(t)}	A		-	-	-	-	-	-	-	-	-	18,000.00	2,350	42.300	-	-	-	18,000.00	2,350	42.300
5.14) TCM Ground Radios Sparing ⁽¹⁵⁾	A		-	-	-	-	-	-	-	-	-	-	-	17.629	-	-	-	-	-	17.629
Subtotal: 5) Tactical Communications Modernization (TCM)			-	-	45.845	-	-	19.718	-	-	204.285	-	-	164.165	-	-	-	-	-	164.165
6) Terrestrial Wideband Transmission Systems (TWTS)																				
6.1) Engineering and Program Support			-	-	3.829	-	-	0.060	-	-	0.643	-	-	1.694	-	-	-	-	-	1.694
6.2) Next Generation Troposcatter (NGT) X and C Band ^{(16)(t)}	A		-	-	-	-	-	-	1,200K	30	36.000	-	-	-	-	-	-	-	-	-
6.3) Line of Sight Replacement (LOS R) Radios ^{(17)(t)}	A		-	-	-	-	-	-	-	-	-	150,000.00	79	11.850	-	-	-	150,000.00	79	11.850
6.4) Line of Sight Replacement (LOS R) Mast Trailer ^{(18)(t)}	A		-	-	-	-	-	-	-	-	-	255,000.00	79	20.145	-	-	-	255,000.00	79	20.145
6.5) Ancillary Components ⁽¹⁹⁾	A		-	-	-	-	-	-	-	-	-	-	-	3.382	-	-	-	-	-	3.382

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19						P-1 Line Item Number / Title: 4633 / Radio Systems									Aggregated Items Title: Radio Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
6.6) Fielding/NET Support ⁽²⁰⁾			-	-	-	-	-	-	-	-	-	-	-	0.398	-	-	-	-	-	0.398
Subtotal: 6) Terrestrial Wideband Transmission Systems (TWTS)			-	-	3.829	-	-	0.060	-	-	36.643	-	-	37.469	-	-	-	-	-	37.469
7) Prior Year Cumulative Funding																				
7.1) Prior Year Cumulative Funding			-	-	568.183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) Prior Year Cumulative Funding			-	-	568.183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	642.940	-	-	28.361	-	-	251.412	-	-	227.320	-	-	-	-	-	227.320
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
(t) indicates the presence of a P-5a																				
Footnotes:																				
(1) VSAT-M Refresh Terminal: FY20 increase of \$12.684M supports initial procurement of 42 VSAT-M Refresh Terminals.																				
(2) VSAT-M Refresh Ancillary: Funding supports procurement of multiple sub-components at multiple unit costs.																				
(3) SMART-T Tech Refresh: Decrease of \$0.552M from FY19 to FY20 reflects the elimination of funding to better align with the National Defense Strategy.																				
(4) SMART-T Program Support: Decrease of \$0.019M from FY19 to FY20 reflects the elimination of funding to better align with the National Defense Strategy.																				
(5) MGUE Ancillary Components: Increase from FY19 to FY20 of \$3.597M supports ancillary component procurement transition from supporting DAGR to supporting MGUE equipment.																				
(6) TCM Ancillary Components: FY20 increase \$1.081M supports procurement of Secure Communication Controller.																				
(7) TCM MBR II MUOS: FY19 TCM MBR II MUOS unit cost has been revised to reflect actuals. FY20 decrease is due to full procurement for MBR II MUOS completing in FY19.																				
(8) TCM: FY18/FY19 procured MUOS Antennas solution which consists of three different variants; each with different unit costs; the unit cost shown is an average of the three Antenna variants. MUOS antennas provide the operational forces with improved satellite communication capability. FY20 decrease in funds is due to completion of antenna procurement in FY19.																				
(9) TCM: Increase of \$71.520M from FY19 to FY20 supports procurement of remaining 92% of MCMP radio Approved Acquisition Objective (AAO). The increase in unit cost between FY19 and FY20 represents an estimated cost for the MCMP radio with the new waveform capability. This variant will cost more than the previously procured version. However, actual costs will not be known until the Army finalizes the contract.																				
(10) TCM HFR II: FY20 increase of \$6.8M reflects initial procurement of VRC variant.																				
(11) TCM HFR II: FY20 increase of \$6.8M reflects initial procurement of MRC variant.																				
(12) TCM HFR II: FY20 increase of \$7.3M reflects initial procurement of TRC variant.																				
(13) TCM HFR II Manpack: FY20 decrease is due to completion of HFR II Manpack procurement in FY19.																				
(14) TCM MCHH: FY20 increase of \$42.3M reflects initial procurement of MCHH variant.																				
(15) TCM Ground Radios Sparing: FY20 increase of \$17.629M includes initial sparing items for HFR II and MCMP for radios.																				
(16) TWTS NGT X and C band: FY19 increase of quantities from PB19 to PB20 is a result of acquisition strategy change to award a contract for a combined X and C band system. FY20 decrease of NGT procurements from PB19 to PB20 aligns with required testing events; remaining systems will be procured in FY21 & FY22.																				
(17) TWTS LOS R Radios: Decrease from PB19 to PB20 aligns with prioritization of NGT procurements. FY20 increase supports initiation of LOS-R program procurements shifted from FY19.																				
(18) TWTS LOS-R Mast Trailer: FY20 increase aligns with procurement of LOS-R radios.																				
(19) TWTS Ancillary Components: Increase in FY20 supports refurbishment of NGT assets to align with fielding.																				
(20) TWTS Fielding/Net Support: Decrease from PB19 to PB20 of \$2.193M is due to delay in procurement of the NGT asset. FY20 increase from FY19 of \$.398M provides program office Fielding Team support for the LOS R procurement.																				

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity:				P-1 Line Item Number / Title:					Aggregated Items:			
1109N / 04 / 19				4633 / Radio Systems					Radio Systems			
Item Number / Title [DODIC]	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) Global Broadcast Service (GBS)												
1.5) TSR-11 ^(†)	✓	2017	General Dynamics / Taunton, MA	C / IDIQ	Colorado Springs, CO	Oct 2018	Jan 2019	8	145,000.00	Y		
1.6) TSR 11 Retrofit ^(†)	✓	2017	General Dynamics / Taunton, MA	C / IDIQ	Colorado Springs, CO	Oct 2018	Jan 2019	92	60,000.00	Y		
1.7) TSR 11 Retrofit (Reserves) ^(†)		2017	General Dynamics / Taunton, MA	C / IDIQ	Colorado Springs, CO	Oct 2018	Jan 2019	5	60,000.00	Y		
2) Very Small Aperture Terminal (VSAT)												
2.3) VSAT-M Refresh Terminal (1)(†)		2020	TBD / TBD	C / TBD	TBD	Mar 2020	Sep 2020	42	302,000.00	Y		
2.7) VSAT-E Rapid Response Kit (RRK) Systems (OCO)	✓	2018	DLA / DLA, Phil, PA@Philadelphia, PA	C / FFP	Aberdeen, MD	Sep 2018	Jan 2019	10	459,000.00	Y		
5) Tactical Communications Modernization (TCM)												
5.4) MBR II MUOS ^{(7)(†)}		2016	Harris Corp / Rochester, NY	C / IDIQ	PRP	May 2018	Sep 2018	24	9,676.00	Y		Oct 2017
5.4) MBR II MUOS ^{(7)(†)}		2018	Harris Corp / Rochester, NY	C / IDIQ	PRP	May 2018	Sep 2018	850	9,676.00	Y		May 2018
5.4) MBR II MUOS ^{(7)(†)}		2019	Harris Corp / Rochester, NY	C / IDIQ	PRP	Dec 2018	Mar 2019	6,977	8,817.05	Y		May 2018
5.5) MUOS Antennas ^{(8)(†)}		2018	Harris Corp / Rochester, NY	C / IDIQ	PRP	May 2018	Oct 2018	2,165	3,372.00	Y		May 2018
5.5) MUOS Antennas ^{(8)(†)}		2019	Harris Corp / Rochester, NY	C / IDIQ	PRP	Dec 2018	Mar 2019	4,352	3,102.70	Y		May 2018
5.6) MCMP ^{(9)(†)}		2019	TBD / TBD, United States Army, PEO C3T, HMS	C / IDIQ	TBD	Jun 2019	Sep 2019	150	50,000.00	Y		
5.6) MCMP ^{(9)(†)}		2020	TBD / TBD, United States Army, PEO C3T, HMS	C / IDIQ	TBD	Feb 2020	May 2020	1,414	55,000.00	Y		
5.8) HFR II VRC ^{(10)(†)}		2020	TBD / MARCORSYSCOM, Quantico, VA	C / IDIQ	TBD	May 2020	Aug 2020	100	68,000.00	Y		Feb 2019
5.9) HFR II MRC ^{(11)(†)}		2020	TBD / MARCORSYSCOM, Quantico, VA	C / IDIQ	TBD	May 2020	Aug 2020	100	68,000.00	Y		Feb 2019
5.10) HFR II TRC ^{(12)(†)}		2020	TBD / MARCORSYSCOM, Quantico, VA	C / IDIQ	TBD	May 2020	Aug 2020	100	73,000.00	Y		Feb 2019
5.11) HFR II Manpack ^{(13)(†)}		2019	TBD / MARCORSYSCOM, Quantico, VA	C / IDIQ	TBD	Sep 2019	Dec 2019	4,166	27,926.50	Y		Feb 2019
5.12) MCHH ^{(14)(†)}		2020	TBD / TBD, United States Army, PEO C3T	C / IDIQ	** NO PCO **	Feb 2020	May 2020	2,350	18,000.00	Y		
6) Terrestrial Wideband Transmission Systems (TWTS)												
6.2) Next Generation Troposcatter (NGT) X and C Band ^{(16)(†)}		2019	TBD / MARCORSYSCOM, Quantico, VA	C / FFP	TBD	Aug 2019	Mar 2020	30	1,200K	Y		Feb 2019
6.3) Line of Sight Replacement (LOS R) Radios ^{(17)(†)}		2020	Ultra / Canada	C / IDIQ	Canada	Jan 2020	Oct 2020	79	150,000.00	Y		Jan 2019

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19				P-1 Line Item Number / Title: 4633 / Radio Systems					Aggregated Items: Radio Systems			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
6.4) Line of Sight Replacement (LOS R) Mast Trailer ^{(18)(†)}		2020	TBD / MARCORSYSCOM, Quantico, VA	C / TBD	TBD	Mar 2020	Sep 2020	79	255,000.00	Y		Jun 2019

† indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19							P-1 Line Item Number / Title: 4633 / Radio Systems												Aggregated Items: Radio Systems															
Items (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE			
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018												Calendar Year 2019															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
		38	2020	NAVY	2,350	0	2,350																									2,350		
6) Terrestrial Wideband Transmission Systems (TWTS)																																		
6.2) Next Generation Troposcatter (NGT) X and C Band ⁽¹⁶⁾																																		
		39	2019	NAVY	30	0	30																									A -	-	30
6.3) Line of Sight Replacement (LOS R) Radios ⁽¹⁷⁾																																		
		40	2020	NAVY	79	0	79																									79		
6.4) Line of Sight Replacement (LOS R) Mast Trailer ⁽¹⁸⁾																																		
		41	2020	NAVY	79	0	79	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	79		

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19										P-1 Line Item Number / Title: 4633 / Radio Systems													Aggregated Items: Radio Systems														
Items <i>(Units in Each)</i>							Fiscal Year 2020												Fiscal Year 2021												B A L A N C E						
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
1) Global Broadcast Service (GBS)																																					
1.5) TSR-11																																					
✓	27	2017	NAVY	8	8	0																											0				
1.6) TSR 11 Retrofit																																					
✓	28	2017	NAVY	92	92	0																											0				
1.7) TSR 11 Retrofit (Reserves)																																					
	29	2017	NAVY	5	5	0																											0				
2) Very Small Aperture Terminal (VSAT)																																					
2.3) VSAT-M Refresh Terminal ⁽¹⁾																																					
	30	2020	NAVY	42	0	42													A -	-	-	-	-	-	-	42											0
5) Tactical Communications Modernization (TCM)																																					
5.4) MBR II MUOS ⁽⁷⁾																																					
Prior Years Deliveries: 126																																					
	31	2016	NAVY	24	24	0																											0				
	31	2018	NAVY	850	850	0																											0				
	31	2019	NAVY	6,977	6,977	0																											0				
5.5) MUOS Antennas ⁽⁸⁾																																					
	32	2018	NAVY	2,165	2,165	0																											0				
	32	2019	NAVY	4,352	4,352	0																											0				
5.6) MCMP ⁽⁹⁾																																					
	33	2019	NAVY	150	150	0																											0				
	33	2020	NAVY	1,414	0	1,414													A -	-	-	414	500	500											0		
5.8) HFR II VRC ⁽¹⁰⁾																																					
	34	2020	NAVY	100	0	100													A -	-	-	100											0				
5.9) HFR II MRC ⁽¹¹⁾																																					
	35	2020	NAVY	100	0	100													A -	-	-	100											0				
5.10) HFR II TRC ⁽¹²⁾																																					
	36	2020	NAVY	100	0	100													A -	-	-	100											0				
5.11) HFR II Manpack ⁽¹³⁾																																					
	37	2019	NAVY	4,166	0	4,166	-	-	1,042	-	-	1,042	-	-	1,041	-	-	1,041											0								
5.12) MCHH ⁽¹⁴⁾																																					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19										P-1 Line Item Number / Title: 4633 / Radio Systems										Aggregated Items: Radio Systems												
Items <i>(Units in Each)</i>							Fiscal Year 2020										Fiscal Year 2021														BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020										Calendar Year 2021															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
	38	2020	NAVY	2,350	0	2,350						A -	-	-	550	800	1,000														0	
6) Terrestrial Wideband Transmission Systems (TWTS)																																
6.2) Next Generation Troposcatter (NGT) X and C Band ⁽¹⁶⁾																																
	39	2019	NAVY	30	0	30	-	-	-	-	-	20	10																			0
6.3) Line of Sight Replacement (LOS R) Radios ⁽¹⁷⁾																																
	40	2020	NAVY	79	0	79				A -	-	-	-	-	-	-	-	30	30	19											0	
6.4) Line of Sight Replacement (LOS R) Mast Trailer ⁽¹⁸⁾																																
	41	2020	NAVY	79	0	79						A -	-	-	-	-	-	20	20	20	19											0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19					P-1 Line Item Number / Title: 4633 / Radio Systems				Aggregated Items: Radio Systems		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	General Dynamics - Taunton, MA	11,000	11,000	11,000	0	5	3	8	0	5	3	8
2	General Dynamics - Taunton, MA	11,000	11,000	11,000	0	5	3	8	0	5	3	8
3	General Dynamics - Taunton, MA	11,000	11,000	11,000	0	5	3	8	0	5	3	8
4	TBD - TBD			TBD	0	3	6	9	0	0	6	6
5	Harris Corp - Rochester, NY	1,200	12,000	24,000	0	4	3	7	0	2	3	5
6	Harris Corp - Rochester, NY	1,200	4,200	7,200	0	20	3	23	0	0	0	0
7	TBD - TBD, United States Army, PEO C3T, HMS			TBD	0	0	0	0	0	0	0	0
8	TBD - MARCORSYSCOM, Quantico, VA			TBD	0	0	0	0	0	0	0	0
9	TBD - MARCORSYSCOM, Quantico, VA			TBD	0	0	0	0	0	0	0	0
10	TBD - MARCORSYSCOM, Quantico, VA			TBD	0	0	0	0	0	0	0	0
11	TBD - MARCORSYSCOM, Quantico, VA			TBD	0	0	0	0	0	0	0	0
12	TBD - TBD, United States Army, PEO C3T			TBD	0	0	0	0	0	0	0	0
13	TBD - MARCORSYSCOM, Quantico, VA	20	20	100	0	0	7	7	0	0	7	7
14	Ultra - Canada	30	45	100	0	0	9	9	0	0	9	9
15	TBD - MARCORSYSCOM, Quantico, VA			TBD	0	0	6	6	0	0	6	6

"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: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)	P-1 Line Item Number / Title: 4634 / Comm Switching & Control Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0506213M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	461.248	38.864	31.175	31.685	0.000	31.685	37.508	37.366	38.148	38.910	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	461.248	38.864	31.175	31.685	0.000	31.685	37.508	37.366	38.148	38.910	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	461.248	38.864	31.175	31.685	0.000	31.685	37.508	37.366	38.148	38.910	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Communications Security (COMSEC): COMSEC is the USMC Commodities Management Office (CMO) providing support for installations and designated acquisition program COMSEC requirements, intermediate logistics, and configuration management. COMSEC provides support for Protected Secure Voice and Data transmissions, the Electronic Key Management Systems (EKMS) transition to the Key Management Infrastructure (KMI), the National Security Agency (NSA) directed Cryptographic Modernization of the COMSEC infrastructure, Installations (base, posts, and station), and platforms. CMO ensures the protection of Marine Corps and Joint cyberspace systems from exploitation and attack. Cyberspace systems include wired and wireless telecommunications systems, Information Technology (IT) systems, and the content processed, stored, or transmitted therein. Rapid changes in the underlying commercial and government cyber infrastructures makes cyber security an increasingly complex and dynamic problem. CMO provides the Warfighter the essential information trust characteristics of availability, confidentiality, integrity, authentication, and non-repudiation.

Joint Communications Support Element (JCSE): Joint Communications Support Element (JCSE), headquartered at MacDill Air Force Base, Fla., rapidly delivers secure, reliable, and scalable command, control, communications, and computer capabilities (C4) ranging from small mobile team missions to full Joint task force headquarters (JTF HQ) deployments.

Combat Data Network (CDN) (formerly Tactical Data Network (TDN) Data Distribution System - Modular (DDS-M)): The CDN provides the commander a modular, integrated, and interoperable Internet Protocol (IP) - based LAN and WAN data networking capability that forms the data communications backbone and data communications support to organizations within a Marine Air-Ground Task Force (MAGTF). The CDN provides an extension of the Defense Information System Network (DISN), Secret Internet Protocol Router Network (SIPRNet), Sensitive But Unclassified (SBU), Non-secure Internet Protocol Router Network (NIPRNet) as well as a Coalition networking capability and access to strategic, supporting establishments, Joint, and other service component tactical data networks for Marine Corps Tactical Data Systems (TDSs) and other DDS-Ms. The CDN provides Marine Corps maneuver elements with a modular and scalable IP data transport capability that will replace, supplement, and be used with existing legacy data systems through the integration of computers, routers, data switches and cabling, Enhanced Position Location and Reporting System (EPLRS) radio net interface units, modems, link encryption devices, and patch panels. Uninterrupted Power Supplies (UPS) provide for emergency power and continuity of operations. The CDN can operate from the SBU up to the Top Secret/Sensitive Compartmented Information (TS/SCI) level and contains integral In-line Network Encryption (INE) device supporting IP Security (IPSec) and Virtual Private Networking (VPN).

Tactical Voice Switching System (TVSS): The TVSS is a modular Integrated Services Digital Network (ISDN) circuit switch capable system that combines voice and Voice Over Internet Protocol telecommunications, multiplexing, transmission encryption, and group modem capabilities in one system for command, control, administrative, and logistic voice communications. It facilitates secure and non-secure voice, circuit switching functions, and network routing and management functions with current fielded tactical systems of the military services. It is interoperable with Joint, coalition, host nation networks, and it operates in unclassified and classified environments.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)					P-1 Line Item Number / Title: 4634 / Comm Switching & Control Systems					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0506213M			
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	36.424	28.727	27.186	-	27.186	32.908	32.671	33.354	34.020
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.440	2.448	4.499	-	4.499	4.600	4.695	4.794	4.890
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	38.864	31.175	31.685	-	31.685	37.508	37.366	38.148	38.910

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4634 / Comm Switching & Control Systems				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0506213M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Comm Switching & Control Systems				- / 461.248	- / 38.864	- / 31.175	- / 31.685	- / -	- / 31.685
P-40	Total Gross/Weapon System Cost				- / 461.248	- / 38.864	- / 31.175	- / 31.685	- / 0.000	- / 31.685
*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: FY2018 Base Appropriation Request: \$38.864M COMSEC: \$1.163M. (\$0.908M Active, \$0.255M Reserve). Funding continued procurement of COMSEC modernization items such as replacement of damaged COMSEC equipment and ancillary devices. JCSE: \$0.474M Active. FY2018 funds reflected the Marine Corps mandated share of efforts to keep the JCSE equipped with the latest state-of-the-art equipment to accomplish its Joint Staff Mission. FY18 funding procured cryptographic equipment in support of the Joint Staff Mission. CDN: \$37.128M (\$34.943M Active, \$2.185M Reserves). FY2018 funds supported Engineering Change Proposals, procurement, and fielding for the CDN networking equipment technology refresh to include the procurement of Small Form Factor items to reduce size, weight, and power (SWaP) requirements of the CDN systems. Funds also supported management, acquisition, logistics, manpower support, Personnel and Training Analysis, and Training Plan development and support. TVSS: \$0.099M Active. FY2018 funds supported equipment training for the added video teleconference equipment and modifications to TVSS systems that ensure viable voice communication capability for all echelons of the MAGTF. FY2019 Base Appropriation Request: \$31.175M COMSEC: \$0.324M (\$0.066M Active, \$0.258M Reserve). Decrease of \$0.839M from FY2018 to FY2019 reflects restructure of COMSEC modernization in support of Expeditionary Force 21 and National Security Agency guidelines. Funding provides for procurements to replace damaged COMSEC equipment, and ancillary devices. JCSE: \$0.481M Active. Increase of \$0.007M from FY2018 to FY2019 reflects the Marine Corps mandated share of efforts to keep the JCSE equipped with the latest state-of-the-art equipment to accomplish its Joint Staff Mission. The specific purpose will be determined at the annual JCSE modernization review. CDN: \$30.370M (\$28.180M Active, \$2.190M Reserves). Decrease of \$6.763M from FY2018 to FY2019 reflects Network Optimization of Information Assurance Modules activities moving from procurement to operations and maintenance. FY19 funds will support technology refresh Engineering Change Proposals, procurement, and fielding for various CDN equipment. 3.1 Program Spt/Fielding/CLS/Training funds will support management, acquisition, logistics, manpower support, personnel, and training analysis as well as training plan development and associated support. 3.3 ECP Network Equipment funds will support procurement of the Local Area Network (LAN) Services Module (Routers). 3.4 Small Form Factor funds will support procurement of additional quantities of Small Form Factor to reduce size, weight, and power (SWaP). 3.9 ECP Network Equipment funds will support procurement of the Local Area Network (LAN) Services Module (Routers) for Reserve Units. 3.10 Small Form Factor (Reserve) funds will support procurement of additional quantities of Small Form Factor to reduce size, weight, and power (SWaP) for Reserve Units. FY2020 Base Appropriation Request: \$31.685M										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4634 / Comm Switching & Control Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0506213M
Line Item MDAP/MAIS Code: N/A		
The FY2020 funding request increased by \$.510M largely due to Combat Data Network (CDN) Reserve funding increase. COMSEC: \$1.250M (\$0.987M Active, \$0.263M Reserves). Increase of \$0.926M from FY2019 to FY2020 reflects continued COMSEC modernization and Engineering Change Proposal (ECP) upgrades to currently fielded assets, in support of Expeditionary Force 21 and National Security Agency guidelines. Funding will continue to procure replacements for damaged COMSEC equipment, ancillary devices, and program support for product verification/validation testing. JCSE: \$0.491M Active. Increase of \$0.010M from FY2019 to FY2020 reflects the Marine Corps mandated share of efforts to keep the JCSE equipped with the latest state-of-the-art equipment to accomplish its Joint Staff Mission. The specific purpose will be determined at the annual JCSE modernization review. CDN: \$29.944M (\$25.708M Active, \$4.236M Reserves). Decrease of \$0.426M from FY2019 to FY2020 reflects the completion of Small Form Factor procurement engineering activities. FY20 funds will support technology refresh Engineering Change Proposals, procurement, and fielding for various parts of the CDN equipment family. The Small Form Factor activities in FY20 are the execution of material optional contract line items based on FY19 procurement engineering effort. Small Form Factor funds (active/reserve) will support procurement of additional quantities of Small Form Factor to reduce size, weight, and power (SWaP). ECP Network Equipment funds will support procurement of the Wide Area Network (WAN) Services Module (Routers) hardware. ECP Network Equipment (Reserves) funds will support procurement of hardware in support of the technology refresh cycle, this upgrades equipment every three to five years.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19							P-1 Line Item Number / Title: 4634 / Comm Switching & Control Systems							Aggregated Items Title: Comm Switching & Control Systems						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Communications Security (COMSEC)																				
1.1) Program/ Production Support ⁽¹⁾	A		-	-	0.493	-	-	0.416	-	-	-	-	-	0.445	-	-	-	-	-	0.445
1.2) COMSEC Hardware ⁽²⁾	A		-	-	11.001	-	-	0.492	-	-	0.066	-	-	0.542	-	-	-	-	-	0.542
1.3) COMSEC Hardware (Reserves)	A		-	-	0.713	-	-	0.255	-	-	0.258	-	-	0.263	-	-	-	-	-	0.263
Subtotal: 1) Communications Security (COMSEC)			-	-	12.207	-	-	1.163	-	-	0.324	-	-	1.250	-	-	-	-	-	1.250
2) Joint Communications Support Equipment (JCSE)																				
2.1) USMC contribution to JCSE			-	-	2.840	-	-	0.474	-	-	0.481	-	-	0.491	-	-	-	-	-	0.491
Subtotal: 2) Joint Communications Support Equipment (JCSE)			-	-	2.840	-	-	0.474	-	-	0.481	-	-	0.491	-	-	-	-	-	0.491
3) Combat Data Network (CDN)																				
3.1) Program Support/ Fielding/CLS/Training ⁽³⁾			-	-	35.827	-	-	5.615	-	-	6.645	-	-	5.719	-	-	-	-	-	5.719
3.2) Network Optimization	A		-	-	14.523	-	-	15.546	-	-	-	-	-	-	-	-	-	-	-	-
3.3) ECP Network Equipment ⁽⁴⁾	A		-	-	78.392	-	-	-	-	-	15.268	-	-	5.818	-	-	-	-	-	5.818
3.4) ECP Small Form Factor ⁽⁵⁾	A		-	-	-	-	-	13.782	-	-	6.267	-	-	14.171	-	-	-	-	-	14.171
3.7) ECP Server Tech Refresh	A		-	-	7.510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8) ECP Laptops	A		-	-	0.789	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.9) ECP Network Equipment (Reserves) ⁽⁶⁾	A		-	-	5.117	-	-	-	-	-	2.190	-	-	2.046	-	-	-	-	-	2.046
3.10) Small Form Factor (Reserve) ⁽⁷⁾	A		-	-	-	-	-	2.185	-	-	-	-	-	2.190	-	-	-	-	-	2.190
3.11) ECP Server Tech Refresh (Reserves)	A		-	-	3.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.12) ECP Laptops (Reserves)	A		-	-	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Combat Data Network (CDN)			-	-	146.083	-	-	37.128	-	-	30.370	-	-	29.944	-	-	-	-	-	29.944
4) Tactical Voice Switching System (TVSS)																				
4.1) TVSS Obsolete ECPs	A		-	-	5.534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19								P-1 Line Item Number / Title: 4634 / Comm Switching & Control Systems							Aggregated Items Title: Comm Switching & Control Systems				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.2) Program Support			-	-	7.515	-	-	0.099	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) Tactical Voice Switching System (TVSS)			-	-	13.049	-	-	0.099	-	-	-	-	-	-	-	-	-	-	-	-
5) Prior Year Cumulative Funding																				
5.1) Prior Year Funding			-	-	287.069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) Prior Year Cumulative Funding			-	-	287.069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	461.248	-	-	38.864	-	-	31.175	-	-	31.685	-	-	-	-	-	31.685

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

Footnotes:

- (1) COMSEC: Increase of \$.445 from FY19 to FY20 provides for support to perform validation and verification on crypto modernization, in accordance with National Security mandates, prior to equipment being issued.
- (2) COMSEC: Hardware \$.476M increase from FY19 to FY20 aligns to procurement schedule. Total increase increase of \$.476 supports procurements and replacements of damaged COMSEC equipment and ancillary devices.
- (3) CDN: Program Spt/Fielding/CLS/Training decrease of \$0.926M from FY19 to FY20 reflects Small Form Factor activities moving from procurement to operations and maintenance.
- (4) CDN systems consist of multiple components with various quantities and prices obscuring individual pricing. CDN: ECP Network Equipment decrease of \$9.450M from FY19 to FY20 reflects completion of Local Area Network (LAN) Services Module (Routers) refresh in FY19. FY20 Network Equipment of \$5.818M is a separate Routers activity that will be a tech refresh for the Wide Area Network (WAN) Services Module.
- (5) CDN: ECP Small Form Factor increase of \$7.904M from FY19 to FY20 reflects the reprioritization of FY19 funds to the Local Area Network (LAN) Services Module (Routers) hardware refresh. Additionally, the delay in the initial award of Small Form Factor contract until 1QFY19 pushed additional funding to FY20. The Small Form Factor effort does not change, procurement of remaining Approved Acquisition Objective (AAO) will occur in FY20.
- (6) CDN: ECP Network Equipment (Reserves) decrease of \$0.144M from FY19 to FY20 reflects completion of Wide Area Network (WAN) Services Module (Routers) hardware refresh.
- (7) CDN systems consist of multiple components with various quantities and prices obscuring individual pricing. CDN: ECP Small Form Factor (Reserves) increase of \$2.190M from FY19 to FY20 reflects the reprioritization of the FY19 funds to the Local Area Network (LAN) Services Module (Routers) hardware refresh. The Small Form Factor effort does not change, but the additional procurements will not happen until FY20.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)							P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206313M, 0605013M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	257.151	36.114	72.842	21.140	0.000	21.140	52.120	96.684	107.645	107.843	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	257.151	36.114	72.842	21.140	0.000	21.140	52.120	96.684	107.645	107.843	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	257.151	36.114	72.842	21.140	0.000	21.140	52.120	96.684	107.645	107.843	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) provides all Marine Corps installations with the base area network communications infrastructure that connects the end-user to the DISA network. BTI modernizes, sustains, upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the Marine Air Ground Task Force (MAGTF). BTI is designed to maintain current industry standards as they relate to technological capabilities for all voice, video and data services (both wired and wireless connections) and are transported via each installation's infrastructure. These data services include, support for but are not limited to, Enhanced 911 (E911), Video-Teleconferencing, Integrated Services Digital Network, Marine Corps Enterprise Network, Energy Monitoring Control Systems, Intrusion Detection Systems, Access Control Systems, Fire Alarm Control Networks and Fleet Training Systems. This includes supporting systems such as optical networks, telecommunications management systems, primary power, voice mail, teleconferencing, and outside plant infrastructure. The ongoing focus is technology refresh and standardization on DISA Unified Capabilities (UC) (voice, video, collaboration, and data) through modernization of installation infrastructure in order to maintain connection to the DISA network. This line item includes funding specified for Defense Policy Review Initiative (DPRI) within the above details.

PUBLIC KEY INFRASTRUCTURE (PKI) is a framework of laws, policies, procedures, and technologies for the use of digital credentials, which provide confidentiality, integrity, authenticity, and non-repudiation in electronic communications and transactions. PKI allows secure access to IT systems. PKI has the ability to electronically sign documents, encrypt messages and documents, and to authenticate and protect web access... In compliance with DOD policy and direction, the USMC Public Key Infrastructure Program (PKI) program provides the resources, manpower and equipment (hardware and software), dedicated to the management (i.e.: generation, production, distribution, control, accounting and destruction) of keys and certificates used by public key-based security services to include NIPRNet and SIPRNet both garrison and deployed. The PKI program operates the USMC Certificate Validation Infrastructure necessary to ensure that only authorized users and server based applications are allowed to operate on the Marine Corps Enterprise Network (MCEN). These services are required for user access to all information system components on the MCEN including network accounts, applications and web sites. PKI must be operable in garrison and tactical/deployed environments. Beginning in FY20, PKI was transferred to a new procurement line item, 4645 Cyberspace Activities, in order to consolidate Marine Corps Cyberspace Procurement Activities into one LI.

CONSOLIDATED EMERGENCY RESPONSE SYSTEM (CERS) is a centrally managed program to field a technology solution in support of emergency dispatch personnel that facilitates timely responses when emergency calls for service are received. CERS provides command and coordination dispatch functions for first responders to support All-Hazard missions. It standardizes Emergency Dispatch Centers to provide notification functions, resource management and situational awareness in order to increase efficient emergency and day-to-day first responder operations. CERS capability is achieved through delivery of Enhanced 911 (E911) and emergency dispatch capabilities consisting of Computer Aided Dispatch (CAD), Fire Station Alerting (FSA) and Mobile Data Computers (MDC) for first responder's vehicles.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0605013M
Line Item MDAP/MAIS Code: N/A ENTERPRISE LAND MOBILE RADIOS (E-LMR) is a modern, digital, Association of Public Safety Communications Officials Project 25 Trunked radio system at all Marine Corps Bases, Posts and Stations (BPS). It provides the wireless Radio Frequency (RF) communications that are required to support the Consolidated Emergency Response System and First Responders (i.e. Police, Fire, Emergency Medical Services) as part of the Emergency Management Command and Coordination initiative. Specifically, the radio system provides RF coverage to BPS populated areas and roads in-between, permitting positive command and coordination between Dispatchers and First Responders and enables their ability to respond to incidents during normal, crisis, and recovery operations. In the wake of 9/11 and the Ft. Hood incident, DoD recognized that effective emergency communications and mutual aid support operation are key elements in providing homeland security, reducing the loss of life and the preservation of property. Thus, the objective for the E-LMR acquisition is to bring forth a reliable interoperability wireless communication system with a limited data capability. This line item includes funding specified for Defense Policy Review Initiative (DPRI) within the above details. TEST, EVALUATION, & ENGINEER ENVIRONMENT (TE&EE) is a Marine Corps Tactical Systems Support Activity (MCTSSA) provides the only Marine Corps organic, operationally relevant, MAGTF Command, Control, Communications, Computers, and Intelligence (C4I) architecture for testing and engineering tasks. This environment is the sole organic solution in the Marine Corps for Link-16 Tactical Data Link Networks for air-to- air, ship, and shore targeting and messaging, validated at MCTSSA before Marine/Navy use in theater. The environment also provides Marine Corps organic equipment, environments, operators, and testers for Joint Communications Exercises, Joint Interoperability Testing, and Systems of System testing. Funding supports modernization and expansion of the MAGTF Systems Integration Environment at MCTSSA for non-Table of Equipment items: Communications Backbone, Test Tool/Data Collection Hardware/Software, and Computers. The environment is essential to operating forces support for fielded C4I systems, as well as evaluating USMC and Joint C4I systems in a controlled, repeatable, and re-configurable manner that reduces program risk and identifies significant deficiencies prior to fielding to the operating forces. More than forty Marine Corps C4I programs and systems rely on MCTSSA support. MARINE CORPS INFORMATION OPERATIONS PROGRAM (MCIOP) provides MAGTF commanders and the Marine Corps a responsive and effective full-spectrum information operations (IO) planning and psychological operations delivery capability by means of deployable support teams and a comprehensive general support IO reach-back capability in order to integrate IO into Marine Corps operations. Multiple classification levels require separate Information Technology (IT) infrastructure to support each classification level in accordance with National Security Agency and Defense Intelligence Agency standards. This includes equipment necessary for connecting internal MCIOC IT infrastructure (voice, video, and data) with the existing Marine Corps Base Quantico support infrastructure.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M, 0605013M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Comm & Elec Infrastructure Supt				- / 257.151	- / 36.114	- / 72.842	- / 21.140	- / -	- / 21.140
P-40	Total Gross/Weapon System Cost				- / 257.151	- / 36.114	- / 72.842	- / 21.140	- / 0.000	- / 21.140
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Justifications: \$36.114M BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) \$26.152M: \$3.369M will support DPRI. FY18 funding is required to install base telecommunications infrastructure for two Japanese funded MILCON projects in Guam. These projects will establish a non-live fire training area in Andersen South and a waterfront headquarters facility in Apra Harbor. The Andersen South training facility will provide Marines with the ability to maintain readiness by conducting convoys, military operations on urbanized terrain, and breaching. The waterfront headquarters facility is required for the mobilization and de-mobilization of cargo and personnel in/out of Guam. These requirements are directly related to the relocation of Marines from Okinawa to Guam. The funding decrease of \$4.360M from FY 2017 to FY 2018 is due to the alignment of the DPRI BTI installation schedule with the Guam construction schedule. \$22.783M will support the technology refresh and standardization of DISA Unified Capabilities (voice, video, collaboration, and data) through UC/DWDM modernization at two Marine Corps installations. The funding increase of \$13.582M from FY 2017 to FY 2018 is due to the increase in the number of installations receiving the UC/DWDM upgrade. PUBLIC KEY INFRASTRUCTURE (PKI): \$0.209M funding supported the continuation of PKI hardware and software implementation across the NIPRNet and SIPRNet for both garrison and deployed networks in order to meet CYBERCOM's Tasking Order requiring the use of hardware tokens for access to networks, network resources, and secure email in accordance with DODI 8520.02 and DODI 8520.03. Funding was utilized to procure necessary tokens and equipment for SIPRNet Token issuance across the MCEN as well as implementation of the DOD PKI NIPRNet Enterprise Alternate Token Management System. CONSOLIDATED EMERGENCY RESPONSE SYSTEM (CERS): \$4.709M supported network connection, procurement, and fielding of emergency dispatch systems. This requirement is necessary to provide effective Public Safety Communications and notifications to emergency responders. If not funded this will affect USMC's ability to provide effective emergency response. ENTERPRISE LAND MOBILE RADIOS (E-LMR): \$3.872M funding supported the completion of E-LMR Western Region Infrastructure contract to include network connection and implementation at Marine Corps Mountain Warfare Training Center-Bridgeport (MWTC). TEST, EVALUATION, & ENGINEERING ENVIRONMENT - EQUIPMENT & TECHNICAL SERVICES (TEEE): \$0.921M Funding supported the maintenance and expansion of the MAGTF Systems Integration Environment at MCTSSA for non-Table of Equipment Items: Communications Backbone, Test Tool/Data Collection Hardware/Software, and Computers. Realignment of effort to new BLI 4620 in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. MARINE CORPS INFORMATION OPERATIONS PROGRAM (MCIOP):										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0605013M
Line Item MDAP/MAIS Code: N/A		
\$0.251M Funding is for the refresh of hardware required on both the classified Joint Worldwide Intelligence Communications System (JWICS) and unclassified Open Source Information System (OSIS) networks. JWICS and OSIS are both provided by the Office of the Director of National Intelligence (ODNI) through Marine Corps Intelligence Activity (MCIA). JWICS provides MCIOC with classified network connectivity and OSIS provides MCIOC with unclassified network connectivity. FY 2019 Justifications: \$72.842M Beginning in FY19, MCIOC and TEEE funding has been realigned from BLI 4635 COMM & ELEC INFRASTRUCTURE SUPT, to BLI 4620, ITEMS UNDER \$5 MILLION (COMM & ELEC). BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) \$45.720M: DPRI - \$22.001M FY 2019 funding, executed by Space and Naval Warfare Center (SPAWAR), will procure, install, and accredit, Information Technology (IT) systems. The scope of the work will support the ongoing eight MILCON projects. There are two Japanese funded MILCON projects (J-007 Waterfront HQ and J-755 Urban Combat Trng) and six U.S. funded MILCON projects (P-250 MALS Fac, P-260 Corrosion Ctrl Hangar, P-270 ACE Gym & Dining, P-295 Ordnance Ops, P-601 Aircraft Maintenance #2, and P-715 KD Ranges). The IT systems are integral to making the facilities complete and useable. All projects are vital to supporting the relocation of Marines from Okinawa to Guam. Cost Element 1.1 funding increase of \$18.632M from FY 2018 to FY 2019 is due to the alignment of the DPRI BTI installation schedule with the Guam construction schedule. UC/DWDM - \$23.719M supports the technology refresh and standardization of DISA Unified Capabilities (voice, video, collaboration, and data) through UC/DWDM modernization at two Marine Corps installations. Modernization and upgrade of the network telecommunications infrastructure is necessary to ensure the delivery of voice, video, and data services that support the day-to-day operations of the Base, Post, and Station. Cost Element 1.2 funding increase of \$0.936M from FY 2018 to FY 2019 is due to the increased size and scope of the installations receiving the UC/DWDM upgrade. PUBLIC KEY INFRASTRUCTURE (PKI): \$.119M funding supports the continuation of PKI hardware and software implementation across the (NIPRNet and SIPRNet) for both garrison and deployed networks in order to meet CYBERCOM's Tasking Order requiring the use of hardware tokens for access to networks, network resources and secure email in accordance with DODI 8520.02 and DODI 8520.03. Funding will also be utilized to procure necessary tokens and equipment for SIPRNet Token issuance across the MCEN as well as implementation of the DOD PKI NIPRNet Enterprise Alternate Token Management System. CONSOLIDATED EMERGENCY RESPONSE SYSTEM (CERS): \$8.391M supports technical refresh engineering of emergency dispatch systems and system hardware/software upgrade. Includes system release upgrades, technical refresh planning, and recurring evaluation to ensure the full scope of CERS systems perform as designed; develop engineering and technical improvements to enhance the reliability, maintainability, safety, and effectiveness of the fielded systems; and periodical verification of compatibility with other non-ERS fielded systems. The increase from \$4.709M in FY 2018 to \$8.391M in FY 2019 is due to the Marine Corps' decision to allocate additional funding to the CERS program in order to support the DoD CIO's Windows 10 mandate. The inability to comply with the DoD Windows 10 mandate could prevent the first responder's ability to communicate and respond effectively to emergency situations increasing the chance of loss of life. ENTERPRISE LAND MOBILE RADIOS (E-LMR): \$13.485M funding supports multi-band radio (MBR) technical refresh and associated fielding support as well as system hardware/software upgrade. The increase from \$3.872M in FY 2018 to \$13.485M in FY 2019 due the Marine Corps' decision to allocate additional funding to the CERS program in order to support the DoD CIO Windows 10 mandate and planned tech refresh for first responder multiband radios (MBR). DPRI \$5.127M funding supports DPRI Guam requirements for ELMR capability expansion from 10 GTR channels to 20 GTR channels in support of P-715 Live Fire Training Range Complex project for the planned build-up of USMC personnel at Northwest Field to Finegayan (future MCB Guam). It will also increase two way radio usage on the Joint Regional Marianas (JRM) ELMR System's Ritidian site and max-out the site's capacity.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0605013M
Line Item MDAP/MAIS Code: N/A		
FY 2020 Justifications: \$21.140M BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) \$14.897M DPRI (Cost Element 1.1), funding supports DPRI Okinawa Telecom infrastructure supporting internal and external communications. Projects include MC0508: Base Communications Building, MC0512-T: Theater, MC0512-T-E: 4 BEQs. Unified Capabilities/Dense Wave Division Multiplexing (Cost Element 1.2) funding will provide for the upgrade and standardization of DISA Unified Capabilities (voice, video, collaboration, and data) through UC/DWDM modernization at one Marine Corps Installation. Modernization and upgrade of the Installation's transport infrastructure is necessary to ensure the delivery of voice, video, and data services that support the day-to-day operations of the Base, Post, and Station. This modernized transport capability provides for the underlying infrastructure supporting transformational requirements identified in the Marine Corps' Assured Command and Control strategy (i.e. migration to the cloud, modernizing the network). These modernizations to the transport infrastructure are required to avoid severe degradation and potential loss of voice, video, and data services, jeopardizing Base operations, unit coordination and critical life safety services. FY19 to FY20 funding decreased from \$45.720M to \$14.897M, a \$30.823M decrease due to the difference in scope and complexity of the modernization efforts, reduction in cost estimates, and construction schedule delays in Guam. CONSOLIDATED EMERGENCY RESPONSE SYSTEM (CERS): \$1.958M Tech Refresh Modernization (Cost Element 2.1) funding increased from \$0.000M in FY 2019 to \$1.000M in FY 2020 due to the start of technical refresh modernization. This effort provides for the modernization of the E911 system to ensure that the components in the current system do not become end of life and unsupported by the vendor. If the aging, end of life equipment is not replaced, then these aging network devices will be removed from the network as a result of not receiving cybersecurity updates which will lead to the Consolidated Emergency Response System being unable to operate which will significantly degrade the first responder's ability to respond to emergency situations in a timely manner. Tech Refresh Engineering (Cost Element 2.2) funding decreased from \$2.091M in FY 2019 to \$0.958M in FY 2020, a \$1.133M decrease, due to the planned completion of technical refresh engineering in FY 2020 as technical refresh modernization and initial hardware procurement begins in FY 2020. Engineering Change Proposal (Cost Element 2.8) funding decreased from \$6.300M in FY 2019 to \$0.00M in FY 2020, a \$6.300M decrease, due to the completion of the mandated Windows 10 upgrade in FY 2019. ENTERPRISE LAND MOBILE RADIOS (E-LMR): \$4.285M Subscriber Units Multi-Band Radios (MBRs) Refresh (Cost Element 4.1) funding decreased from \$6.705M in FY 2019 to \$3.207M in FY 2020, a \$3.498M decrease, due to the reduced MBR refresh requirement in FY 2020. Funding in this cost element supports the continued replacement of MBRs which are becoming end of life and unsupported by the vendor. If this equipment is not replaced then these antiquated end of life mobile radios would prevent USMC First Responders and Range and Training Area personnel from achieving operational mission support to protect life and property on USMC Installations. Fielding Activities (Cost Element 4.6) funding decreased from \$1.880M in FY 2019 to \$1.045M in FY 2020, a \$0.835M decrease, due to the reduction of Multi-Band Radio fielding in FY 2020. E-LMR funding will support the fielding activities associated with the multi-band radio (MBR) technical refresh which replaced end of life mobile radios. This cost element directly supports Cost Element 4.1 Engineering Change Proposal (Cost Element 4.7) funding decreased from \$4.900M in FY 2019 to \$0.000M in FY 2020, a \$4.900M decrease, due to planned completion of the mandated system hardware/software upgrade in FY 2019.		

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Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M, 0605013M
Line Item MDAP/MAIS Code: N/A		
E-LMR DPRI (Cost Element 4.8): \$0.033M - FY20 Funding is required to procure equipment to expand the current ELMR network that supports JRM. JRM provides ELMR support for all DOD and Federal organizations on the island of Guam. ELMR expansion is vital to supporting the relocation of Marines from Okinawa to Guam.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19									P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt						Aggregated Items Title: Comm & Elec Infrastructure Supt					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Base Telecommunications Infrastructure (BTI) ⁽¹⁾																				
1.1) BTI - Defense Policy Review Initiative Equipment	A		-	-	21.149	-	-	3.369	-	-	22.001	-	-	0.248	-	-	-	-	-	0.248
1.2) BTI - Unified Capabilities & Dense Wave Division Multiplexing	A		-	-	97.119	-	-	22.783	-	-	23.719	-	-	14.649	-	-	-	-	-	14.649
1.3) BTI - Outside Plants	A		-	-	7.773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) Base Telecommunications Infrastructure (BTI)			-	-	126.041	-	-	26.152	-	-	45.720	-	-	14.897	-	-	-	-	-	14.897
2) CONSOLIDATED EMERGENCY RESPONSE SYSTEM (CERS)																				
2.1) CERS - Tech Refresh Modernization ⁽²⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
2.2) CERS - Tech Refresh Engineering ⁽³⁾	A		-	-	-	-	-	-	-	-	2.091	-	-	0.958	-	-	-	-	-	0.958
2.4) CERS - Fielding Activities			-	-	22.176	-	-	1.827	-	-	-	-	-	-	-	-	-	-	-	-
2.5) CERS - Emergency Dispatch for Marine Corps Installations	A		-	-	27.152	-	-	1.360	-	-	-	-	-	-	-	-	-	-	-	-
2.6) CERS - E-911 for Marine Corps Installations	A		-	-	25.671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7) CERS - Network Equipment	A		-	-	1.229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8) CERS - Engineering Change Proposal ⁽⁴⁾	A		-	-	-	-	-	1.522	-	-	6.300	-	-	-	-	-	-	-	-	-
Subtotal: 2) CONSOLIDATED EMERGENCY RESPONSE SYSTEM (CERS)			-	-	76.228	-	-	4.709	-	-	8.391	-	-	1.958	-	-	-	-	-	1.958
3) PUBLIC KEY INFRASTRUCTURE (PKI)																				
3.1) IT Equipment (To include cables, infrastructure, storage devices, etc.) ⁽⁵⁾	A		-	-	15.596	-	-	0.209	-	-	0.119	-	-	-	-	-	-	-	-	-
Subtotal: 3) PUBLIC KEY INFRASTRUCTURE (PKI)			-	-	15.596	-	-	0.209	-	-	0.119	-	-	-	-	-	-	-	-	-
4) Enterprise Land Mobile Radio (ELMR)																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19								P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt							Aggregated Items Title: Comm & Elec Infrastructure Supt					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.1) ELMR - Subscriber Units Multi-Band Radios Refresh ⁽⁶⁾	A		-	-	-	-	-	-	-	-	6.705	-	-	3.207	-	-	-	-	-	3.207
4.2) ELMR - Western Region Infrastructure	A		-	-	13.277	-	-	3.355	-	-	-	-	-	-	-	-	-	-	-	-
4.6) ELMR - Fielding Activities ⁽⁷⁾	A		-	-	0.500	-	-	0.517	-	-	1.880	-	-	1.045	-	-	-	-	-	1.045
4.7) ELMR - Engineering Change Proposal ⁽⁸⁾	A		-	-	2.200	-	-	-	-	-	4.900	-	-	-	-	-	-	-	-	-
4.8) ELMR - Defense Policy Review Initiative Equipment ⁽⁹⁾	A		-	-	-	-	-	-	-	-	5.127	-	-	0.033	-	-	-	-	-	0.033
Subtotal: 4) Enterprise Land Mobile Radio (ELMR)			-	-	15.977	-	-	3.872	-	-	18.612	-	-	4.285	-	-	-	-	-	4.285
5) MARINE CORPS INFORMATION OPERATIONS PROGRAM (MCIOP)																				
5.1) Hardware	A		-	-	2.279	-	-	0.251	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) MARINE CORPS INFORMATION OPERATIONS PROGRAM (MCIOP)			-	-	2.279	-	-	0.251	-	-	-	-	-	-	-	-	-	-	-	-
6) TEST, EVALUATION, & ENGINEERING ENVIRONMENT																				
6.1) Test Tools	A		-	-	0.806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.2) Landing Forces Operations Center Integration System Test Environment	A		-	-	3.505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3) MCNEL Fly-Away Kits	A		-	-	0.703	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.4) CAC2S STIL Equip (Functional Equivalent)	A		-	-	0.838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.5) VoIP-AS SIP Lab	A		-	-	2.284	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6) Test Engineering Labs Infrastructure	A		-	-	1.022	-	-	0.921	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) TEST, EVALUATION, & ENGINEERING ENVIRONMENT			-	-	9.158	-	-	0.921	-	-	-	-	-	-	-	-	-	-	-	-
7) Prior Year Cumulative Funding																				
7.1) Prior Year Cumulative Funding	A		-	-	11.872	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) Prior Year Cumulative Funding			-	-	11.872	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	257.151	-	-	36.114	-	-	72.842	-	-	21.140	-	-	-	-	-	21.140
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				

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: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19	P-1 Line Item Number / Title: 4635 / Comm & Elec Infrastructure Supt	Aggregated Items Title: Comm & Elec Infrastructure Supt
Footnotes: (1) FY19 to FY20 funding decreased from \$45.720M to \$14.897M, a \$30.823M decrease due to the difference in scope and complexity of the modernization efforts, reduction in cost estimates and construction schedule delays in Guam. (2) Tech Refresh Modernization (Cost Element 2.1) funding increased from \$0.000M in FY 2019 to \$1.000M in FY 2020 due to the start of technical refresh modernization. This effort provides for the modernization of the E911 system to ensure that the components in the current system do not become end of life and unsupported by the vendor. (3) Tech Refresh Engineering (Cost Element 2.2) funding decreased from \$2.091M in FY 2019 to \$0.958M in FY 2020, a \$1.133M decrease, due to the planned completion of the engineering required to complete CERS modernization which will begin procurement in FY 2020. (4) Engineering Change Proposal (Cost Element 2.8) funding decreased from \$6.300M in FY 2019 to \$0.00M in FY 2020, a \$6.300M decrease, due to the completion of the mandated Windows 10 upgrade in FY 2019. (5) Beginning in FY20, PKI funds were moved to LI 4645, Cost Element 1.4. (6) Subscriber Units Multi-Band Radios (MBRs) Refresh (Cost Element 4.1) funding decreased from \$6.705M in FY 2019 to \$3.207M in FY 2020, a \$3.498M decrease, due to the reduced MBR refresh requirement in FY 2020. Funding in this cost element supports the continued replacement of MBRs which are becoming end of life and unsupported by the vendor leading to additional risk for USMC emergency responders. (7) Fielding Activities (Cost Element 4.6) funding decreased from \$1.880M in FY 2019 to \$1.045M in FY 2020, a \$0.835M decrease, due to the reduction of Multi-Band Radio fielding in FY 2020. E-LMR funding will support the fielding activities associated with the multi-band radio (MBR) technical refresh which replaced end of life mobile radios. This cost element directly supports Cost Element 4.1 . (8) Engineering change proposal (Cost Element 4.7) decreased \$4.900M from FY 2019 - FY 2020 due to planned completion of mandated system hardware/software upgrade. (9) E-LMR DPRI (Cost Element 4.8): \$0.033M - FY20 Funding is required to procure equipment to expand the current ELMR network that supports Joint Region Marianas (JRM). JRM provides ELMR support for all DOD and Federal organizations on the island of Guam. ELMR expansion is vital to supporting the relocation of Marines from Okinawa to Guam.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)							P-1 Line Item Number / Title: 4645 / Cyberspace Activities					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0206313M, 0305251M				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	27.632	0.000	27.632	89.900	75.766	89.088	105.573	-	387.959
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	27.632	0.000	27.632	89.900	75.766	89.088	105.573	-	387.959
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	27.632	0.000	27.632	89.900	75.766	89.088	105.573	-	387.959
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Beginning in FY20, efforts in this line item (LI) were transferred from existing LIs in order to consolidate Marine Corps Cyberspace Procurement Activities into one LI. MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG), and UNITED STATES MARINE CORPS FORCES CYBERSPACE COMMAND (MARFORCYBER) efforts were transferred from LI 4630, Common Computer Resources. PUBLIC KEY INFRASTRUCTURE (PKI) was transferred from LI 4635, Comm and Elec Infrastructure Support. MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG) will execute Marine Corps Global Information Grid Operations and Marine Corps Defensive Cyber Operations in support of Marine Corps operational requirements in order to enhance freedom of action across all warfighting domains, while denying the efforts of adversaries to degrade or disrupt this advantage through cyberspace. MCCOG is the Network Operations (NETOPS) component of Marine Corps Forces Cyberspace Command and provides network situational awareness, command and control, and technical support to Marine Corps operating forces and supporting establishment organizations, both in garrison and while deployed. MCCOG is the primary DOD Computer Network Defense Service Provider for the U.S. Marine Corps and directs Service actions to prevent and respond to security incidents. The MCCOG delivers numerous enterprise services for the Marine Corps, to include mainframe computer services management, Defense Message System (DMS), DOD Public Key Infrastructure (PKI), and Active Directory/Global Address List. The MCCOG is responsible for the operations and defense of MCEITS, which delivers data center services to the Marine Corps. Finally, MCCOG provides technical expertise to HQMC, Marine Corps Combat Development Command (MCCDC), Marine Corps Systems Command (MCSC), and Marine Corps organizations around the world in support of Information Technology initiatives undertaken within the Marine Corps and DOD. The PMC funding will support Core Competencies in the Computer Networks Defense and Network Ops areas with skilled cyber-warriors (24x7x365). The added responsibilities and network security events have required continued operational employment of current assets and personnel. PMC funding is based on increased mission requirements dictated by DoD/USSTRATCOM/USCYBERCOM Operations to defend the network. The procurement funding will be used to refresh the MCCOG Alternate Network Operations Security Center, USMC Site R refresh, Network Common Operational Picture Tools, Host Based Security Systems, Secure Configuration Compliance Validation Initiative and Secure Configuration Remediation Initiative (SCCVI/SCRI), Intrusion Prevention and scanning tools, Virtual Private Network, and other operations and defense tools. UNITED STATES MARINE CORPS FORCES CYBERSPACE COMMAND (MARFORCYBER) will procure hardware and software for Deployable Mission Support Systems (DMSS) suites. DMSS Cyber Mission Forces (CMF) weapon system in direct support of global missions. DMSS suites are maintained with hardware support and software renewals, and refresh perpetual software licenses and engineering support. As directed by United States Cyberspace Command (USCC) in FY20 PBD 700A1, MARFORCYBER was directed to man, train and equip a Joint Mission Operation Center (JMOC) at Fort Meade. This is one of four JMOCs in support of United States Cyberspace Command (USCC) and Joint Forces Headquarters Cyber (JFHQ-C) mission. PUBLIC KEY INFRASTRUCTURE (PKI) is a framework of laws, policies, procedures, and technologies for the use of digital credentials, which provide confidentiality, integrity, authenticity, and non-repudiation in electronic communications and transactions. PKI allows secure access to IT systems. PKI has the ability to electronically sign documents, encrypt messages and documents, and to authenticate and protect												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4645 / Cyberspace Activities
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0206313M, 0305251M	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
web access... In compliance with DOD policy and direction, the USMC Public Key Infrastructure Program (PKI) program provides the resources, manpower and equipment (hardware and software), dedicated to the management (i.e.: generation, production, distribution, control, accounting and destruction) of keys and certificates used by public key-based security services to include NIPRNet and SIPRNet both garrison and deployed. The PKI program operates the USMC Certificate Validation Infrastructure necessary to ensure that only authorized users and server based applications are allowed to operate on the Marine Corps Enterprise Network (MCEN). These services are required for user access to all information system components on the MCEN including network accounts, applications and web sites. PKI must be operable in garrison and tactical/deployed environments. USMC MAGTF DCO-IDM Suite: The USMC Marine Corps Air Ground Task Force (MAGTF) Defensive Cyberspace Operations-Internal Defensive Measures (DCO-IDM) Suite program provides the self-contained, fly-away equipment (hardware and software) for MAGTF DCO-IDM Teams to conduct vulnerability analysis (VA), incident response (IR), and other DCO-IDM functions concurrently on classified and unclassified networks. The teams utilize the interface (a laptop), data from passive and active sensors (servers, laptops, and taps), and the analytic capability from the hardware and software in order to determine the state of the supported commander's network, host, and major weapon systems. Software includes Government Off-the-Shelf (GOTS), Commercial Off-the-Shelf (COTS), and free and open-source software (FOSS). MAGTF DCO Suites are intended to be part of a common family of systems in support of MAGTF cyberspace operations. MAGTF DCO-IDM Suites must be operable in garrison and tactical/deployed environments.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)						P-1 Line Item Number / Title: 4645 / Cyberspace Activities				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0206313M, 0305251M			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Cyberspace Activities				- / 0.000	- / -	- / -	- / 27.632	- / -	- / 27.632
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	- / 27.632	- / 0.000	- / 27.632
*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: Beginning in FY20, efforts in this line item (LI) were transferred from existing LIs in order to consolidate Marine Corps Cyberspace Procurement Activities into one LI. MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG), and UNITED STATES MARINE CORPS FORCES CYBERSPACE COMMAND (MARFORCYBER) efforts were transferred from LI 4630, Common Computer Resources. PUBLIC KEY INFRASTRUCTURE (PKI) was transferred from LI 4635, Comm and Elec Infrastructure Support. FY18 Base Appropriation: \$21.111M MARFORCYBER: FY18 Base Appropriation Request: \$20.902M completed MARFORCYBER's headquarters MILCON facility on the East Campus at Fort Meade. It also completed the FY14 MILCON project number P001 items such as Distributed Computing Equipment, Video Teleconferencing and Multi-media Equipment, Network Hardware, Telephone Equipment, Cable Infrastructure, Wireless Center, and Operations Center. In addition it procured hardware and software for Deployable Mission Support Systems (DMSS). DMSS kits are maintained with hardware support, software renewals, and refresh perpetual software licenses. DMSS kits are required in order for MARFORCYBER to support Marine units all across the globe. PUBLIC KEY INFRASTRUCTURE (PKI): \$0.209M funding supported the continuation of PKI hardware and software implementation across the (NIPRNet and SIPRNet) for both garrison and deployed networks in order to meet CYBERCOM's Tasking Order requiring the use of hardware tokens for access to networks, network resources and secure email in accordance with DODI 8520.02 and DODI 8520.03. Funding will also be utilized to procure necessary tokens and equipment for SIPRNet Token issuance across the MCEN as well as implementation of the DOD PKI NIPRNet Enterprise Alternate Token Management System. FY19 Base Appropriation: FY19 Base Appropriation: \$21.150M MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG): FY19 Base Appropriation Request: \$7.683M procures hardware and software for Defensive Cyber Operations support and network infrastructure upgrades. The increase of \$4.455M from FY18 to FY19 is due to increased equipment procurement and technology insertion for defensive cyberspace operations capabilities, Department of Defense Information Network operations, and continuity of operations requirements. MARFORCYBER: FY19 Base Appropriation Request: \$13.348M procures hardware and software for Deployable Mission Support Systems (DMSS). DMSS kits are maintained with hardware support, software renewals, and refresh perpetual software licenses. DMSS kits are required in order for MARFORCYBER to support Marine Corps units all across the globe. \$8.488M will procure DMSS for MARFORCYBER and \$4.860M will procure DMSS for the Marine Corps Operating Forces. The \$4.326M decrease from FY18 to FY19 is a result of the completion of the MARFORCYBER Headquarters Building, FY14 MILCON Project P001.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 04: Communications and Electronics Equipment / BSA 19: Other Support (Non-Tel)		P-1 Line Item Number / Title: 4645 / Cyberspace Activities
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0206313M, 0305251M	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
PUBLIC KEY INFRASTRUCTURE (PKI): \$0.119M funding supports the continuation of PKI hardware and software implementation across the (NIPRNet and SIPRNet) for both garrison and deployed networks in order to meet CYBERCOM's Tasking Order requirement. Funding decrease of \$0.090M from FY18 to FY19 is the result of virtualization of tactical hardware and the reclassification of NIPRNet Enterprise Alternate Tokens and SIPRNet Tokens from equipment to consumables. FY20 Base Appropriation: \$27.632M MARINE CORPS CYBERSPACE OPERATIONS GROUP (MCCOG): FY20 Base Appropriation Request: \$7.841M will procure hardware and software for Defensive Cyber Operations Support, remote forensics solutions, and Hunt Deployable suites. The increase of \$0.158M will provide technical refresh for the USMC Unified Communications project items such as Distributed Computing Equipment, Video Teleconferencing and Multi-Media Equipment, Network Hardware, Telephone Equipment, and Telepresence Content Server. Prior to FY20 this program was aligned to LI 4630. MARFORCYBER: FY20 Base Appropriation Request: \$14.289M will procure hardware and software for Deployable Mission Support Systems (DMSS). The \$0.941M increase from FY19 to FY20 is a result of DMSS suites that are maintained with hardware support, software renewals, and refresh perpetual software licenses. DMSS kits are required in order for MARFORCYBER to provide Marine Corps units all across the globe with cyberspace activity support. \$6.800M will procure tools, platforms, infrastructure, and sustainment for various Offensive Cyberspace Operations (OCO) requirements to encourage an appropriate Service-Level analysis for the Joint Mission Operations Center (JMOC) Meade requirement in support of United States Cyberspace Command (USCC) and Joint Forces Headquarters Cyber (JFHQ-c) mission. \$4.271M will procure a Defensive Cyberspace Operations War room, Commercial Solutions for Classified (CSfC), engineering, tools, platforms, OCO, DCO infrastructure, and sustainment requirements. Prior to FY20 this program was aligned to LI 4630. PUBLIC KEY INFRASTRUCTURE (PKI): FY20 Appropriation Request: \$0.502M funding will support the continuation of PKI hardware and software implementation across the (NIPRNet and SIPRNet) for both garrison and deployed networks in order to meet DOD CIO requirement. The \$0.383M increase from FY19 to FY20 is a result of Certificate Validate Infrastructure (CVI) component refresh requirement. CVI is required in order for end users to authenticate themselves when signing onto Marine Corps Enterprise Network (MCEN) accounts. These services are required for user access to all information system components on the MCEN including network accounts, applications and web sites. PKI must be operable in garrison and tactical/deployed environments. Prior to FY20 this program was aligned to LI 4635. Prior to FY20 this program was aligned to LI 4635. USMC MAGTF DCO-IDM Suite: \$5.000M will procure MAGTF DCO-IDM Suites for fielding to I, II, & III MEF DCO-IDM Companies and Marine Corps Communications-Electronics School. Previously the Operating Forces utilized the DMSS kits for Defensive Cyberspace Operations. This is a new start in FY20.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 04 / 19						P-1 Line Item Number / Title: 4645 / Cyberspace Activities									Aggregated Items Title: Cyberspace Activities					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Cyberspace Activities																				
1.1) MAGTF DCO-IDM Suite ⁽¹⁾	A		-	-	-	-	-	-	-	-	-	-	-	5.000	-	-	-	-	-	5.000
1.2) MARFORCYBER ⁽²⁾	A		-	-	-	-	-	-	-	-	-	-	-	18.560	-	-	-	-	-	18.560
1.3) MCCOG ⁽³⁾	A		-	-	-	-	-	-	-	-	-	-	-	3.570	-	-	-	-	-	3.570
1.4) PKI ⁽⁴⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.502	-	-	-	-	-	0.502
Subtotal: 1) Cyberspace Activities			-	-	0.000	-	-	-	-	-	-	-	-	27.632	-	-	-	-	-	27.632
Total			-	-	0.000	-	-	-	-	-	-	-	-	27.632	-	-	-	-	-	27.632

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

Footnotes:

⁽¹⁾ Prior to FY20, DMSS kits were utilized to meet this requirement. Beginning in FY20 USMC Operating Forces will begin procurement of a system that meets their unique requirements; the MAGTF DCO-IDM Suite.

⁽²⁾ Prior to FY20, DMSS kits were requested in LI 4630, Cost Element 7.1. Increase of \$11.071 from FY19 to FY20 is due to Joint Mission Operations Center (JMOC) Meade requirement in support of United States Cyberspace Command (USCC) and Joint Forces Headquarters Cyber (JFHQ-c) mission. Procure Defensive Cyberspace Operations (DCO) War room, Commercial Solutions for Classified (CSfC), engineering, tools, platforms, OCO, DCO infrastructure and sustainment requirements.

⁽³⁾ Prior to FY20, MCCOG funds were requested in LI 4630, Cost Elements 4.2 and 4.3.

⁽⁴⁾ Prior to FY20, PKI funds were requested in LI 4635, Cost Element 3.1.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 1: Administrative Vehicles						P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	326.157	56.953	23.864	28.913	0.000	28.913	30.626	34.484	31.254	32.203	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	326.157	56.953	23.864	28.913	0.000	28.913	30.626	34.484	31.254	32.203	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	326.157	56.953	23.864	28.913	0.000	28.913	30.626	34.484	31.254	32.203	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 Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Commercial Cargo Vehicles - The Commercial Cargo Vehicles program is a centrally managed program for procurement of commercially-available and general purpose vehicles such as heavy and light trucks, special purpose trucks, certain fire department trucks, refuse collection trucks, tanker trucks and all types of trailers. This line also includes P-19 Replacement, which is a tactical firefighting vehicle.												
This line item includes funding specified for Defense Policy Review Initiative (DPRI) within the above details.												
Emergency Response Vehicles (ERV) - Replaces firefighting apparatuses for maintaining the minimal installations ERV requirements for structural and airfield operations capabilities throughout the Marine Corps. Additionally, Defense Policy Review Initiative (DPRI). This requirement is to outfit the new Government of Japan funded J-008 Fire Station for the future Marine Corps Base Guam. Specifically this funding will procure the Command Vehicle, Aerial Ladder Truck, Fire Engine, HAZMAT Rescue Vehicle, and Water Tender.												
Commercial Passenger Vehicles (CPV) - CPV is a centrally managed program for the procurement of commercially available vehicles, such as sedans, vans and buses of various sizes. These vehicles are primarily used for passenger transportation on Marine Corps Base Japan, where leases are rarely economical.												
P-19 Replacement (P-19R) - is replacing the obsolete A/S32P-19A Crash Fire Rescue fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle is outfitted with advanced fire suppression equipment. It provides rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement is employed to fight structural fires in support of base camps and as firefighting support to other elements of the Marine Air Ground Task Force (MAGTF), such as ammunition supply points, Petroleum, Oil and Lubricant (POL) distribution points or hazardous material storage facilities.												
Marine Security Guard (Vehicles) - Funds the procurement of commercial vehicles for the Marine Security Guard based on the requirements of the particular command and country embassies.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	48.034	23.864	28.913	-	28.913	30.626	34.484	31.254	32.203		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 1: Administrative Vehicles					P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206624M			
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	8.919	-	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	56.953	23.864	28.913	-	28.913	30.626	34.484	31.254	32.203

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 1: Administrative Vehicles						P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Commercial Cargo Vehicles	P-5a, P-21			- / 326.157	- / 56.952	- / 23.864	- / 28.913	- / -	- / 28.913
P-40	Total Gross/Weapon System Cost				- / 326.157	- / 56.953	- / 23.864	- / 28.913	- / 0.000	- / 28.913
*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: FY18 Base Appropriation Request: \$56.953M(\$48.034M Active, \$8.919M Reserves) P-19R - Vehicles - \$28.549M (\$19.630M Active, \$8.919M Reserves) Funds procured vehicles and efforts such as modifications and ECP's. Additionally, programmatic oversight (production/progress reviews) and logistics supportability (e.g., FDT) of those production vehicles is required in support of P-19. Compliance with NFPA-414 is required since it is a KPP. The ordering period for the contract expired May FY18. Funding in FY19 and out reflects P-19R realignment to BLI 5050 to centralize modification funding for USMC tactical vehicles. Commercial Passenger Vehicles - \$5.647M: Funds procured buses capable of transporting 33-60 passengers to provide intra shuttle services for Marine Corps bases in Okinawa. Additionally, vans capable of seating 7-8 passengers, sedans and law enforcement sedans will be procured to replace vehicles that are over-aged for Marine Corps Installations Pacific (MCIPAC). Currently, the commercial passenger fleet for MCIPAC is 11% overage. Not only does the program provide support for operating forces' critical training and logistics missions, it also supports quality of life transportation for service-members and families stationed on Marine Corps Installations. Procurement of passenger vehicles in Japan is critical due to the limited ability to lease these types of vehicles. Funds of \$4.7M will procure over-the-snow vehicles (troop carrier, cargo and instructor variants) to replace (21) over-aged BV -206 Small Unit Support Vehicles (SUSV) to safely support training and installation requirements during the winter cycle for the Marine Corps Mountain Warfare Training Center. Commercial Cargo Vehicles - \$10.771M: Funds procured low speed electric vehicles, various types of trailers (specialty, lowbed & flatbed) and trucks (fuel, stake-bed, nurse unit, semi-tractor, sewer maintenance & pickup) necessary to provide support for operating forces' critical training and logistics missions. Equipment being procured for Bases and Stations in California must comply with California Air Resource Board (CARB) to reduce greenhouse gas emissions over the coming decade while improving air quality. Emergency Response Vehicles - \$4.533M: Funds procured fire trucks (pumpers/aerial), rescue trucks, and ambulances for Marine Corps activities and commands. The funds will also procure brush trucks and water extenders to maintain ranges, training areas and facilities on Marine Corps Installations. Marine Security Guard (Vehicles) - \$7.453M - Funds the procurement of commercial vehicles for the Marine Security Guard based on the requirements of the particular command and country embassies. FY19 Base Appropriation Request: \$23.864M. Reduction of \$33.089M from FY18 to FY19 is due largely to the P-19 line moving to BLI 5050. Commercial Passenger Vehicles - \$3.643M: Funds will continue to procure buses capable of transporting 33-60 passengers to replace the over-aged buses currently being used to provide intra shuttle services for Marine Corps bases in Okinawa. Additionally, vans capable of seating 7-8 passengers, sedans and law enforcement sedans will be procured to replace over-aged vehicles to better support the operation and mission of Marine Corps Installations Pacific (MCIPAC). This operating force support provides quality of life transportation for service-members and families stationed on Marine Corps Installations. Funds will also be used for the procurement of mission critical passenger vehicles (pickup trucks and passenger vans capable of transporting 7-8 passengers) needed for the recent transition of Townsend Bombing Range from the Georgia Air National Guard to the Marine Corps. The average vehicles are increasingly unreliable and are costly to maintain and negatively impact mission capability.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 1: Administrative Vehicles		P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		
Commercial Cargo Vehicles - \$8.469M: Funds will continue to procure low speed electric vehicles, various types of trailers (specialty, lowbed & flatbed) and trucks (fuel, stake-bed, nurse unit, semi-tractor, sewer maintenance & pickup) necessary for Installations support and to provide support for operating forces' critical training and logistics missions. Additionally, provide lift for combat readiness training, the transportation of equipment in support of deployments and the return of deployed forces. Vehicles being procured for California Bases will comply with California Air Resource Board (CARB) to reduce greenhouse gas emissions over the coming decade while improving air quality. Non-compliance results in fines of \$10k per day, per vehicle. Funds will also be used to procure mission critical commercial cargo vehicles (tractor trucks, low-boy trailers, etc.) used to move equipment needed to operate and maintain ranges, training areas, facilities, and fight wild land fires on Marine Corps Installations. Defense Policy Review Initiative (DPRI) Guam - Cargo vehicle funds of \$1.826M will procure (4) JP-5 fuel trucks required to support Marine Corps aviation operations on the North ramp of Naval Support Activity Andersen Air Force Base. Emergency Response Vehicles - \$3.492M: Funds will procure fire trucks (pumpers/aerial), rescue trucks, and ambulances for Marine Corps activities and commands. The funds will also procure brush trucks and water extenders to maintain ranges, training areas and facilities on Marine Corps Installations. Marine Security Guard (Vehicles) - \$6.434M - Funds the procurement of commercial vehicles for the Marine Security Guard based on the requirements of the particular command and country embassies. FY20 Base Appropriation Request: \$28.913M Commercial Passenger Vehicles - \$4.275M: Funding will continue to recapitalize over-aged buses capable of transporting 33-60 passengers in order to provide safe intra shuttle services for Marine Corps bases in Okinawa. Additionally, vans capable of seating 7-8 passengers, sedans and law enforcement sedans will be procured to replace over-aged vehicles to better support the operation and mission of Marine Corps Installations Pacific (MCIPAC) and provide vehicle transportation primarily used for operational forces on Marine Corps Bases Japan, where the Marine Corps cannot lease these vehicles economically. Replacing these vehicles provide a "right-type" and "right-size" solution to support the operation and mission of the USMC OCONUS (Japan) commands by making it possible to safely move operational forces for home station training and deployments. The average vehicles are increasingly unreliable and are costly to maintain and negatively impact mission capability. Funds in the amount of \$0.136M will be used for the procurement of mission critical passenger vehicles (pickup trucks, vans, etc.) that is essential to the continuity of operating and maintaining 35K acres of Townsend Bombing Range (TBR) to accommodate air-to-ground delivery of precision guided munitions (PGM). Funding increased from FY19 to FY20 by \$0.768M to replace over-aged buses capable of transporting 33-60 passengers used for the intra shuttle services required to support Marine Corps Bases in Okinawa as well as procure passenger vehicles (pickup trucks and vans capable of seating 7-8 passengers) for Townsend Bombing Range (TBR). Commercial Cargo Vehicles - \$10.074M: Funds will recapitalize a portfolio of non-tactical vehicles such as low speed electric vehicles, various types of trailers (specialty, lowbed & flatbed) and trucks (fuel, stake-bed, nurse unit, semi-tractor, sewer maintenance & pickup). Recapitalization of over-aged vehicles provide safer non-tactical cargo vehicle support for transportation of things (TOT) necessary to move operational forces for home station training and deployment movements and to support operations and maintenance of Marine Corps Installations. On/off-road vehicles being procured for California Bases must comply with California Air Resource Board (CARB) to reduce greenhouse gas emissions over the coming decade while improving air quality. Non-compliance results in fines of \$10k per day, per vehicle. Funds in the amount of \$0.370M will be used to procure mission critical commercial cargo vehicles (tractor trucks, low-boy trailers, etc.) to operate and maintain 35K acres of Townsend Bombing Range (TBR) to accommodate air-to-ground delivery of precision guided munitions (PGM). Increase of \$0.149M from FY19 to FY20 is due to addition of Townsend Bombing Range requirements. Emergency Response Vehicles - \$4.109M: Funds will procure fire trucks (pumpers/aerial), rescue trucks, and ambulances for Marine Corps activities and commands. The funds will also procure brush trucks and water extenders to maintain ranges, training areas and facilities on Marine Corps Installations.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 1: Administrative Vehicles		P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		
DPRI Guam - \$1.711M: Funds will procure an aerial ladder truck for the Government of Japan funded J-008 Fire Station for future Marine Corps Base Guam. Funding will also be used to procure one type 6 brush truck for the P-715 training ranges for future MCBG. Increase of \$2.328M from FY19 to FY20 is in support of DPRI Guam and additional emergency response vehicle requirements. Marine Security Guard (Vehicles) - \$8.238M - Funds the procurement of commercial vehicles for the Marine Security Guard based on the requirements of the particular command and country embassies. The increase of \$1.804 from FY19 to FY20 is due to the activation of new MSG detachments that will require the purchase of new armored vehicles to support secure transportation of MSGs around their respective country as DoS does not permit the use of personal vehicles. The increases from FY19 to FY20 also takes into consideration an increase to the unit cost of vehicles which is due to a change in vendor.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 1							P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles								Aggregated Items Title: Commercial Cargo Vehicles					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
1) Commercial Cargo Vehicles																				
1.1) Commercial Passenger Vehicles	A		-	-	3.161	-	-	5.647	-	-	3.643	-	-	4.411	-	-	-	-	-	4.411
1.2) Emergency Response Vehicles	A		-	-	23.578	-	-	4.533	-	-	3.492	-	-	5.820	-	-	-	-	-	5.820
1.3) Commercial Cargo Vehicles	A		-	-	174.330	-	-	10.771	-	-	10.295	-	-	10.444	-	-	-	-	-	10.444
Subtotal: 1) Commercial Cargo Vehicles			-	-	201.069	-	-	20.951	-	-	17.430	-	-	20.675	-	-	-	-	-	20.675
2) P-19 Replacement																				
2.1) P-19R Procurement Vehicles ^(†)	A		0.645	52	33.531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) P-19 Procurement of Vehicles ^(†)	A		0.608	54	32.842	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) P-19R Procurement of Vehicles ^(†)	A		0.659	24	15.806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4) P19R Procurement of Vehicles ^(†)	A		-	-	-	0.641	18	11.534	-	-	-	-	-	-	-	-	-	-	-	-
2.5) P 19R Procurement of Reserves Vehicles ^(†)	A		-	-	-	0.641	13	8.330	-	-	-	-	-	-	-	-	-	-	-	-
2.6) Procurement of P19R Vehicle ^(†)	A		-	-	-	0.714	3	2.142	-	-	-	-	-	-	-	-	-	-	-	-
2.7) Program Office Support	A		-	-	14.844	-	-	0.147	-	-	-	-	-	-	-	-	-	-	-	-
2.8) Contracting Data Requirement List (CDRL)	A		-	-	0.974	-	-	1.184	-	-	-	-	-	-	-	-	-	-	-	-
2.9) First Destination Transportation (FDT)			-	-	0.210	-	-	0.371	-	-	-	-	-	-	-	-	-	-	-	-
2.10) Program Support (Halotron Carts)	A		-	-	1.350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.11) Shipping/ODC's	A		-	-	-	-	-	0.130	-	-	-	-	-	-	-	-	-	-	-	-
2.12) Halotron Bottle	A		-	-	0.706	-	-	0.458	-	-	-	-	-	-	-	-	-	-	-	-
2.13) Halotron Service Kits	A		-	-	-	-	-	0.266	-	-	-	-	-	-	-	-	-	-	-	-
2.14) Intercom Procurement (Tocnet)	A		-	-	3.596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 1								P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles							Aggregated Items Title: Commercial Cargo Vehicles				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
2.15) Engineering Change Proposal (ECP)	A		-	-	1.344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.16) Maintenance of Data	A		-	-	-	-	-	1.368	-	-	-	-	-	-	-	-	-	-	-	-
2.17) Configuration Changes	A		-	-	2.154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.18) Contractor Logistics Support (CLS)	A		-	-	0.536	-	-	2.607	-	-	-	-	-	-	-	-	-	-	-	-
2.19) Contract Logistics Support Parts	A		-	-	2.030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.20) Initial Issue Provisioning (IIP) and Secondary Repairables	A		-	-	5.361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.21) Special Tools	A		-	-	0.191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.22) Instructor Key Personnel Training, NET and Refurbishment	A		-	-	0.598	-	-	0.012	-	-	-	-	-	-	-	-	-	-	-	-
2.23) Prior Year Cumulative			-	-	1.187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) P-19 Replacement			-	-	117.260	-	-	28.549	-	-	-	-	-	-	-	-	-	-	-	-
3) Marine Security Guard																				
3.1) UnArmored ^(†)	A		0.058	65	3.772	0.056	56	3.128	0.066	40	2.634	0.085	47	3.992	-	-	-	0.085	47	3.992
3.2) Armored ^(†)	A		0.092	44	4.056	0.103	42	4.324	0.095	40	3.800	0.099	43	4.246	-	-	-	0.099	43	4.246
Subtotal: 3) Marine Security Guard			-	-	7.828	-	-	7.452	-	-	6.434	-	-	8.238	-	-	-	-	-	8.238
Total			-	-	326.157	-	-	56.952	-	-	23.864	-	-	28.913	-	-	-	-	-	28.913

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

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity:				P-1 Line Item Number / Title:				Aggregated Items:				
1109N / 05 / 1				5006 / Commercial Cargo Vehicles				Commercial Cargo Vehicles				
Item Number / Title [DODIC]	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 (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2) P-19 Replacement												
2.1) P-19R Procurement Vehicles ^(†)		2015	Oshkosh Corp@Oshkosh WI - Oshkosh, Wisconsin@ / WI	C / FFP	MARCORSYSCOM	May 2015	Apr 2016	21	0.612	Y		
2.1) P-19R Procurement Vehicles ^(†)		2016	Oshkosh Corp@Oshkosh WI - Oshkosh, Wisconsin@ / WI	C / FFP	MARCORSYSCOM	Aug 2016	Feb 2017	17	0.667	Y		
2.1) P-19R Procurement Vehicles ^(†)		2017 ⁽¹⁾	Oshkosh Corp@Oshkosh WI - Oshkosh, Wisconsin@ / WI	C / FFP	MARCORSYSCOM	Nov 2016	Jul 2017	14	0.667	Y		
2.2) P-19 Procurement of Vehicles ^(†)		2017	Oshkosh@Oshkosh WI / WI	C / FP	MARCORSYSCOM	May 2017	Nov 2017	54	0.608	Y		
2.3) P-19R Procurement of Vehicles ^(†)		2017	Oshkosh Corp@Oshkosh WI - Oshkosh, Wisconsin / WI	C / FP	MARCORSYSCOM	Jul 2017	Jan 2018	24	0.687	Y		
2.4) P19R Procurement of Vehicles ^(†)		2018	Oshkosh Corp@Oshkosh WI / WI	C / FFP	MARCORSYSCOM	Oct 2017	Oct 2017	18	0.641	Y		
2.5) P 19R Procurement of Reserves Vehicles ^(†)		2018	Oshkosh Corp@Oshkosh WI / WI	C / FFP	MARCORSYSCOM	Oct 2017	Oct 2017	13	0.641	Y		
2.6) Procurement of P19R Vehicle ^(†)		2018	Oshkosh Corp@Oshkosh WI / WI	C / FFP	MARCORSYSCOM	Feb 2018	Feb 2018	3	0.714	Y		
3) Marine Security Guard												
3.1) UnArmored		2017	Various Vendors / Various	Various	Arlington VA	Jun 2017	Jun 2017	65	0.058	Y		
3.1) UnArmored		2018	Various Vendors / Various	Various	Arlington VA	Jun 2018	Jun 2018	56	0.056	Y		
3.1) UnArmored		2019	Various Vendors / Various	Various	Arlington VA	Jun 2019	Jun 2019	40	0.066	N	Oct 2018	
3.1) UnArmored		2020	Various Vendors / Various	Various	Arlington VA	Jun 2020	Jun 2020	47	0.085	N	Oct 2018	
3.2) Armored		2017	Various / Various	Various	Arlington VA	Jun 2017	Jun 2017	44	0.092	Y		
3.2) Armored		2018	Various / Various	Various	Arlington VA	Jun 2018	Jun 2018	42	0.103	Y		
3.2) Armored		2019	Various / Various	Various	Arlington VA	Jun 2019	Jun 2019	40	0.095	N	Oct 2018	
3.2) Armored		2020	Various / Various	Various	Arlington VA	Jun 2020	Jun 2020	43	0.099	N	Oct 2018	
^(†) indicates the presence of a P-21 Footnotes: ⁽¹⁾ P19R production contract ordering period ended 29 May 2018												

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 1										P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles										Aggregated Items: Commercial Cargo Vehicles													
Items (Units in Each)							Fiscal Year 2015										Fiscal Year 2016													BALANCE			
OCO#	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015										Calendar Year 2016																
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP		
2) P-19 Replacement																																	
2.1) P-19R Procurement Vehicles																																	
	42	2015	NAVY	21	0	21								A	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	2	2	10
	42	2016	NAVY	17	0	17																		A	-	-						17	
	42	2017	NAVY	14	0	14																								14			
2.2) P-19 Procurement of Vehicles																																	
	43	2017	NAVY	54	0	54																								54			
2.3) P-19R Procurement of Vehicles																																	
	44	2017	NAVY	24	0	24																								24			
2.4) P19R Procurement of Vehicles																																	
	45	2018	NAVY	18	0	18																								18			
2.5) P 19R Procurement of Reserves Vehicles																																	
	46	2018	NAVY	13	0	13																								13			
2.6) Procurement of P19R Vehicle																																	
	47	2018	NAVY	3 ⁽²⁾	0	3																								3			
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 1										P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles										Aggregated Items: Commercial Cargo Vehicles									

Items (Units in Each)						Fiscal Year 2017												Fiscal Year 2018												BALANCE					
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT				Calendar Year 2017									Calendar Year 2018																
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP				
2) P-19 Replacement																																			
2.1) P-19R Procurement Vehicles																																			
42	2015	NAVY		21	11	10	2	3	3	2																				0					
42	2016	NAVY		17	0	17	-	-	-	-	2	2	2	2	2	2	2	1														0			
42	2017	NAVY		14	0	14		A -	-	-	-	-	-	-	2	4	4	4														0			
2.2) P-19 Procurement of Vehicles																																			
43	2017	NAVY		54	0	54						A -	-	-	-	-	-	-	4	4	5	4	5	5	4	5	4	6	5	3					
2.3) P-19R Procurement of Vehicles																																			
44	2017	NAVY		24	0	24									A -	-	-	-	-	-	-	1	2	2	2	2	2	2	2	2	7				
2.4) P19R Procurement of Vehicles																																			
45	2018	NAVY		18	0	18																A1	-	-	-	-	-	-	-	-	-	-	-	-	17
2.5) P 19R Procurement of Reserves Vehicles																																			
46	2018	NAVY		13	0	13																A1	-	-	-	-	-	-	-	-	-	-	-	-	12
2.6) Procurement of P19R Vehicle																																			
47	2018	NAVY		3 ⁽²⁾	0	3																	A1	-	-	-	-	-	-	-	-	-	-	-	2
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 1										P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles														Aggregated Items: Commercial Cargo Vehicles												
Items (Units in Each)							Fiscal Year 2019														Fiscal Year 2020														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	Calendar Year 2019														Calendar Year 2020															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
2) P-19 Replacement																																				
2.1) P-19R Procurement Vehicles																																				
	42	2015	NAVY		21	21	0																													0
	42	2016	NAVY		17	17	0																													0
	42	2017	NAVY		14	14	0																													0
2.2) P-19 Procurement of Vehicles																																				
	43	2017	NAVY		54	51	3	3																												0
2.3) P-19R Procurement of Vehicles																																				
	44	2017	NAVY		24	17	7	2	3	2																										0
2.4) P19R Procurement of Vehicles																																				
	45	2018	NAVY		18	1	17	-	-	1	2	4	5	5																						0
2.5) P 19R Procurement of Reserves Vehicles																																				
	46	2018	NAVY		13	1	12	-	-	-	-	-	-	4	4	4																				0
2.6) Procurement of P19R Vehicle																																				
	47	2018	NAVY		3 ⁽²⁾	1	2	-	-	-	-	-	-	-	-	2																				0
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 1			P-1 Line Item Number / Title: 5006 / Commercial Cargo Vehicles		
			Aggregated Items: Commercial Cargo Vehicles		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Oshkosh Corp@Oshkosh WI - Oshkosh, Wisconsin@ - WI	12	200	200	0	3	6	9	0	1	6	7
2	Oshkosh@Oshkosh WI - WI	12	200	200	0	3	6	9	0	1	6	7
3	Oshkosh Corp@Oshkosh WI - Oshkosh, Wisconsin - WI			TBD	23	0	0	0	0	0	0	0
4	Oshkosh Corp@Oshkosh WI - WI			TBD	0	0	0	0	0	0	0	0
5	Oshkosh Corp@Oshkosh WI - WI			TBD	0	0	0	0	0	0	0	0
6	Oshkosh Corp@Oshkosh WI - WI			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).

Footnotes:

⁽²⁾ Delivery date is based on true contract deliverable date vice contract award date as shown in system.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles							P-1 Line Item Number / Title: 5050 / Motor Transport Modifications					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206624M					
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	143.166	23.371	55.832	19.234	0.000	19.234	13.691	15.874	16.207	16.532	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	143.166	23.371	55.832	19.234	0.000	19.234	13.691	15.874	16.207	16.532	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	143.166	23.371	55.832	19.234	0.000	19.234	13.691	15.874	16.207	16.532	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Motor Transport Modifications funds numerous essential modifications, initiatives, and new vehicle procurements that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, and other issues that affect vehicle reliability, safety, availability, and readiness. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management and allows USMC to develop and implement improvements, as needed, to respond to the evolving requirements of the Marine Corps and sustain the fleet. Medium Tactical Vehicle Replacement (MTVR) - The MTVR is the Marine Corps' medium ground lift capability supporting all elements of the Marine Air-Ground Task Force (MAGTF). With its 70% off-road mission profile and the addition of a highly survivable armor package, the MTVR is heavily used in contingency operations as well as missions supporting humanitarian operations. It has a payload of 7.1 tons off-road and 15 tons on-road, a high-performance suspension, traction control, central tire inflation system, and automatic transmission, to transport personnel, ammunition, bulk cargo, and/or bulk fuel and water in a variety of environments. The MTVR family of vehicles includes a cargo variant (both standard and extended wheel base configurations), a dump truck, a wrecker, a tractor and a High Mobility Artillery Rocket System (HIMARS) Rocket Resupply System Vehicle. This program funds numerous product improvements to the MTVR via engineering change proposals (ECPs), resulting from post-production requirements in Force Protection, Communications, on-board Situational Awareness, and improved fuel efficiency required across the Range of Military Operations, as well as addressing product quality deficiencies and other issues that impact vehicle safety, reliability, availability and readiness. The requirements capability change to improve Fuel Efficiency for the MTVR is part of the program's initiatives to lower fuel consumption and extend the vehicle's cruising range, while lowering operating costs over the life of the MTVR. Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV): Provides Warfighters multi-mission platforms capable of mitigating Improvised Explosive Devices (IEDs), underbody mines, and small arms fire threats. Multiple MRAP vehicle Categories (CATs) have been procured, fielded, and are now being sustained, such as the MRAP-Air Terrain Vehicle (M-ATV), with combat operations (OPS) in rural, mountainous, and urban terrain. Category I - Urban combat operations, ambulance. Category II - Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III - Mine/IED clearance ops, explosive ordnance disposal. Funding includes required Government Furnished Equipment (GFE)/subsystems and ECP/Capability Insertion in response to an UUNS and Warfighter safety and survivability requirements. P-19 Replacement (P-19R): Vehicles are replacing the obsolete A/S32P-19A Crash Fire Rescue fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle is outfitted with advanced fire suppression equipment. It provides rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19R may also be employed to fight structural fires in support of base camps and as firefighting support to other elements of the Marine Air-Ground Task Force (MAGTF), such as ammunition supply points, Petroleum, Oil, and Lubricant (POL) distribution points, or hazardous material storage facilities.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles		P-1 Line Item Number / Title: 5050 / Motor Transport Modifications
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		

Logistics Vehicle System Replacement (LVSR) Modification: The LVSR is the Marine Air-Ground Task Force Heavy Lift Capability system. The LVSR is built on the Oshkosh TAC-4 fully independent suspension, allowing it to traverse a variety of challenging terrain while carrying a payload of up to 22.5 tons. The LVSR accomplishes a variety of tactical logistics missions using armored and unarmored cargo tractor and recovery variants. Funding provides for modifications required for the LVSR fleet of vehicles, such as updated brackets and cables for warfighter systems such as legacy Blue Force Tracker upgraded to Joint Battle Command Platform and CREW Vehicle Receiver Jammer upgraded to CREW Vehicle Receiver Jammer V2. These modifications also include critical safety upgrades, which include the brake corrosion modification, which prevents brake failure due to submersion in water during fording, boat and bridge operations, and improved blast seats that reduce occupant injury during IED strikes. Finally, modifications include life cycle issues such as cab reconditioning, parts obsolescence and life cycle cost reductions.

Motor Transport Modification (MTM) - Light Tactical Family of Vehicles (FoV) - Modification program funds numerous essential modifications, initiatives, and new vehicle procurements that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, and other issues that affect vehicle reliability, availability and readiness. A proactive and focused approach ensures proper sustainment and life-cycle management of the light tactical vehicle fleet and allows the program office to develop and implement improvements, as needed, to respond to the evolving requirements of the Marine Corps.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	23.179	55.595	18.819	-	18.819	13.271	15.443	15.767	16.083
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.192	0.237	0.415	-	0.415	0.420	0.431	0.440	0.449
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	23.371	55.832	19.234	-	19.234	13.691	15.874	16.207	16.532

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles						P-1 Line Item Number / Title: 5050 / Motor Transport Modifications				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Motor Transport Modifications				- / 143.166	- / 23.371	- / 55.832	- / 19.234	- / -	- / 19.234
P-40	Total Gross/Weapon System Cost				- / 143.166	- / 23.371	- / 55.832	- / 19.234	- / 0.000	- / 19.234
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: Funding changes after FY 2018 reflect the inclusion of funding for Mine Resistant Ambush Protected (MRAP) vehicles previously funded in BLI 6520 and the P-19R vehicles previously funded in BLI 5006. Funding for these programs were realigned to BLI 5050 beginning in FY19 to centralize modification funding for USMC tactical vehicles. FY 2018 Base Appropriation Request: \$23.372M Medium Tactical Vehicle Replacement (MTVR) Modification: \$7.477M; Integration of ECP Kits for installation on over 300 MTVRs. Funding supported the procurements of calibration technologies that were transitioned to the Marine Corps from the Office of Naval Research (ONR) Future Naval Capability initiative to improve the MTVR's fuel efficiency to begin installing on the MTVR armored fleet during FY19. Motor Transport Modifications (MTM) \$3.598M; Funding provided for the implementation of the fleet service life extension initiatives, vehicles, quality deficiency resolutions, safety initiatives, transparent armor re-lamination and environmental/state transportation mandated vehicle changes. Provided support for ECP integration to include addressing deficiencies of HMMWV vehicles due to up armoring and age degradation of the fleet, testing and fielding efforts for hosted systems i.e. C4I, weapons, and intel that use light tactical vehicles as their base transportation mode. Logistics Vehicle System Replacement (LVSR) Modification: \$12.105M; \$.192M Reserve. Funding provided for various modifications required for the LVSR fleet of vehicles, such as for the integration of brackets and cables for warfighter systems, and for critical safety upgrades, including the brake corrosion ECP and the armored door lock improvements. These upgrades addressed issues that affect user safety, life cycle issues, obsolescence, and ultimately, life cycle cost reductions. FY 2019 Base Appropriation Request: \$11.392M Medium Tactical Vehicle Replacement (MTVR) Modification: \$7.147M; In FY19, MTVR has a three-tier integration effort that spans across Marine Corps Expeditionary Forces (MEFs), Marine Augmentation Program-Kuwait (MAP-K) and the Marine Forces-Reserve (MFR), for procuring and installing several required Modifications. These modification upgrades improve the ability of the Marine to "shoot, move, and communicate" by prioritizing the installation of the C4I (command, control, communications, computers, and intelligence) systems, upgrading the weapons mount kit, as well as the front and rear cab axle mounts that are required due to the addition of heavy armor. Additionally, installation of the Turret Gunner Restraint System (TGRS) provides rollover protection for the Marine in the turret using a full-body, six-point harness. Logistics Vehicle System Replacement (LVSR) Modification: \$3.080M; \$.215M Reserve. Provides for modifications required for the LVSR fleet of vehicles, such as updated brackets and cables for warfighter systems such as legacy Blue Force Tracker upgraded to Joint Battle Command Platform and CREW Vehicle Receiver Jammer upgraded to CREW Vehicle Receiver Jammer V2. These modifications also include critical safety upgrades which include the brake corrosion modification which prevents brake failure due to submersion in water during fording, boat and bridge operations, and improved blast seats that reduce occupant injury during IED strikes. Finally, modifications include life cycle issues such as cab reconditioning, parts obsolescence and life cycle cost reductions. P-19 Replacement: \$.218M.022M Reserves. Funding will provide initial support, training, Spares and FSRs for Reserves' vehicles. Funding in FY19 and out reflects P-19R vehicles previously in BLI 5006.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles		P-1 Line Item Number / Title: 5050 / Motor Transport Modifications
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		
Mine Resistant Ambush Protected (MRAP) Family of vehicles (FoV): \$0.710M Funds ECP upgrades/modifications for the enduring MRAP vehicle requirement. Continues ECP Upgrades and Modifications to maintain vehicle relevancy in meeting force protection threats, such as blast, rollover or water submersion events, and responding to operational needs. Funding in FY19 and out reflects MRAP previously in BLI 6520. FY 2020 Base Appropriation Request: \$19.234M Motor Transport Modifications (MTM) \$.542M; Funding will provide for limited quality deficiency resolutions and safety initiatives. Provides the USMC portion of an engineering change proposal and associated technical manual updates that addresseperformance and safety deficiencies from the HMMWV family of vehicles operating in excess of the gross vehicle weight rating. The increase of \$.542M from FY19 to FY20 restores funding in FY20 to support vehicle safety and reliability modifications/ECPs. Medium Tactical Vehicle Replacement (MTVR) Modification: \$14.501M; In FY20, MTVR's will continue to have a three-tier integration effort to meet approved operational requirements that span across Marine Corps Expeditionary Forces (MEFs), Marine Augmentation Program-Kuwait (MAP-K) and the Marine Forces-Reserve (MFR), for procuring and installing several types of modification kits. These modification upgrades improve the ability of the crew to "shoot, move, and communicate" by prioritizing the installation of the C4I (command, control, communications, computers, and intelligence) systems, upgrading the weapons mount kit to enable the employment of heavy machine guns, as well as the front and rear cab axle mounts that are required due to the addition of heavy armor. C4I kits enable the platform to accept Radios, Intercoms, Jammers and Blue Force Situational Awareness capabilities. Additionally, installation of the Turret Gunner Restraint System (TGRS) provides rollover protection for the Marine in the turret using a full-body, six-point harness. The increase of \$.7.354M between FY19 and FY20 is due to the cost of vehicle and ECP modification upgrades that are planned for procurement and installation in FY20; installation costs account for over half the total cost of each ECP. Mine Resistant Ambush Protected (MRAP) \$.742M. Will procure ECP upgrades/modifications for the enduring MRAP vehicle requirement. Continues ECP upgrades and Modifications to maintain relevancy in meeting force protection threats, such as blast, rollover or water submersion events, and responding to operational needs. The increase of \$.032M from FY19 to FY20 is the result of support of ECP upgrades. P-19 Replacement (P-19R) \$.179M; \$.183M Reserve. Will procure engineering change proposals (ECPs), such as lightening arrestors. The increase of \$.122M from FY19 to FY20 is the result of such ECPs to the new vehicle. Logistics Vehicle System Replacement (LVSR) \$2.855M; \$.232M Reserve. Will procure modified cabs which prevents deadlining the vehicle due to corrosion and modified seats to sustain the current level of performance of LVSR during IED strikes. The decrease of \$.208M from FY19 to FY20 is the result of completion of LVSR door lock ECP. OCO: FY 2019 OCO Appropriation Request: \$44.440M Medium Tactical Vehicle Replacement (MTVR) Modification: \$18.001M; OCO funded procurement and installation of various ECP kits required for the MTVRs located in the Marine Expeditionary Unit (MEU) Augmentation Program-Kuwait (MAP-K), and other Marine units. The ECP Kits included the C4ISR kits which provide cabling and bracketry for the Joint Battle Command Platform (JBC-P) and Counter IED Systems (CVRJ); Rear Cab Mounts, Front Cab Mounts, the Automatic Fire Extinguishing System (AFES) and the Emergency Egress Window (EEW). These kits increase the overall survivability, safety and the Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) capabilities of the MTVR Armored Family of Vehicles. Logistics Vehicle System Replacement: (LVSR): \$.519M OCO. Will fund procurement and installation of Engineering Change Proposals (ECP), such as brake safety, JBC-P and counter IED Systems, CVRJ's needed for the LVSRs located in the MAP-K. These kits increase force protection of all LVSR variants by ensuring the vehicles have updated ECPs to increase braking capability, navigation and counter IED threats. Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV): \$25.920M OCO. Funds the installation of Egress kits procured in response to UUNS 08275UC and 10215UC; MARCENT Enduring requirements. The Egress kit increases force protection on all Cougar CAT I and CAT II variants by ensuring that vehicle occupants can safely exit the vehicle after blast, rollover or water submersion events. FY18 - FY19 OCO overall increase of \$21.920M (BLI 6520 FY18 \$4.000M realigned to BLI 5050 FY19 \$25.920M) for Cougar Egress Installation.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles		P-1 Line Item Number / Title: 5050 / Motor Transport Modifications
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2									P-1 Line Item Number / Title: 5050 / Motor Transport Modifications						Aggregated Items Title: Motor Transport Modifications					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Medium Tactical Vehicle Replacement (MTVR) Modifications																				
1.1) Vehicle Safety Modifications/ Upgrades Proc & Installs ⁽¹⁾	A		-	-	3.445	-	-	0.835	-	-	10.896	-	-	3.982	-	-	-	-	-	3.982
1.2) Vehicle ECP Integration Equipment & Installs ⁽²⁾	A		-	-	44.929	-	-	1.505	-	-	7.881	-	-	3.825	-	-	-	-	-	3.825
1.3) Energy Efficiency Initiative ⁽³⁾	B		-	-	5.170	-	-	4.437	-	-	5.545	-	-	5.598	-	-	-	-	-	5.598
1.4) Energy Initiative Program Support ⁽⁴⁾	A		-	-	0.450	-	-	0.700	-	-	0.826	-	-	1.096	-	-	-	-	-	1.096
1.5) Prior Years Cumulative Funding	A		-	-	10.042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) Medium Tactical Vehicle Replacement (MTVR) Modifications			-	-	64.036	-	-	7.477	-	-	25.148	-	-	14.501	-	-	-	-	-	14.501
2) LVSR Mods																				
2.1) LVSR Systems Integrations Equip & Installs (GFE, TOCNET, etc)	A		-	-	24.458	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Vehicle Safety Mods/Upgrades	A		-	-	13.050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) LVSR Modification Kits (ECPs) ⁽⁵⁾	A		-	-	20.627	-	-	12.105	-	-	3.599	-	-	2.855	-	-	-	-	-	2.855
2.4) LVSR Reserves (ECP, Safety & Integration) ⁽⁶⁾			-	-	3.717	-	-	0.192	-	-	0.215	-	-	0.232	-	-	-	-	-	0.232
2.5) Prior Years Cumulative Funding	A		-	-	12.532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) LVSR Mods			-	-	74.384	-	-	12.297	-	-	3.814	-	-	3.087	-	-	-	-	-	3.087
3) Motor Transport Mods																				
3.1) Safety & Reliability Modifications ⁽⁷⁾	B		-	-	4.216	-	-	1.571	-	-	-	-	-	0.507	-	-	-	-	-	0.507
3.2) Program Integration	B		-	-	-	-	-	2.026	-	-	-	-	-	-	-	-	-	-	-	-
3.3) Technical Publications ⁽⁸⁾	A		-	-	0.085	-	-	-	-	-	-	-	-	0.035	-	-	-	-	-	0.035
3.4) Prior Year Cumulative Funding	A		-	-	0.445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Motor Transport Mods			-	-	4.746	-	-	3.597	-	-	-	-	-	0.542	-	-	-	-	-	0.542

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5050 / Motor Transport Modifications								Aggregated Items Title: Motor Transport Modifications					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4) P-19R																				
4.1) Engineering Change Proposals/ Modernization/ Upgrade Kits ⁽⁹⁾	A		-	-	-	-	-	-	-	-	0.218	-	-	0.179	-	-	-	-	-	0.179
4.2) Reserves Engineering Change Proposals/ Modernization/ Upgrade Kits ⁽¹⁰⁾	A		-	-	-	-	-	-	-	-	0.022	-	-	0.183	-	-	-	-	-	0.183
Subtotal: 4) P-19R			-	-	0.000	-	-	-	-	-	0.240	-	-	0.362	-	-	-	-	-	0.362
5) Mine Resistant Ambush Protected (MRAP)																				
5.1) Cougar Egress Installation ⁽¹¹⁾	A		-	-	-	-	-	-	-	-	25.920	-	-	-	-	-	-	-	-	-
5.2) ECP Upgrades ⁽¹²⁾	A		-	-	-	-	-	-	-	-	0.710	-	-	0.742	-	-	-	-	-	0.742
Subtotal: 5) Mine Resistant Ambush Protected (MRAP)			-	-	0.000	-	-	-	-	-	26.630	-	-	0.742	-	-	-	-	-	0.742
Total			-	-	143.166	-	-	23.371	-	-	55.832	-	-	19.234	-	-	-	-	-	19.234

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

Footnotes:

- ⁽¹⁾ FY19 to FY20 difference of \$6.914M is due to the FY19 OCO funding added in FY19 to satisfy the increasingly urgent need to provide Safety ECP's for MTVR's in theater.
- ⁽²⁾ The FY19 to FY20 difference of \$4.056M is due to the OCO funding added in FY19 to satisfy the increasingly urgent need to provide Safety ECP's for MTVR's in theater.
- ⁽³⁾ Increase from FY19 to FY20 of \$0.053M is for additional scheduled installations of the FE software kits on various tactical vehicles in the fleet during FY20; initial technical support for those SW kits included in cost.
- ⁽⁴⁾ FY19 to FY20 increase of \$.270M is due to adjusted cost estimate to include additional support to process/analyze data as upgrades to fleet are completed.
- ⁽⁵⁾ The decrease of \$.744M from FY19 to FY20 is the result of completion of LVSR door lock ECP.
- ⁽⁶⁾ The increase of \$.017M from FY19 to FY20 is to provide safety ECPs.
- ⁽⁷⁾ FY19 to FY20 increase of \$.507M restores funding to support safety and reliability modifications/ECPs such as body mounts for the HMMWV.
- ⁽⁸⁾ FY19 to FY20 increase of \$.035M restores funding to technical publication updates associated with safety and reliability modifications/ECPs.
- ⁽⁹⁾ The decrease of \$.039M from FY19 to FY20 is the result of fewer funded ECPs to the vehicle, determined through operational use.
- ⁽¹⁰⁾ The increase of \$.161M Reserve from FY19 to FY20 is the result of ECPs to the vehicle, determined through operational use.
- ⁽¹¹⁾ FY19 - FY20 OCO decrease of \$25.9200M is the result of completion of Cougar Egress Installation.
- ⁽¹²⁾ FY19 - FY20 increase of \$0.032 funding is to provide safety ECP's.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles	P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0605812M, 0605813M	Other Related Program Elements: 0603635M, 0605812M, 0605813M

Line Item MDAP/MAIS Code: 279

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	346	527	1,642	1,398	-	1,398	1,065	994	940	957	-	7,869
Gross/Weapon System Cost (\$ <i>in Millions</i>)	168.759	233.439	599.274	558.107	0.000	558.107	484.337	441.728	423.591	432.023	627.562	3,968.820
Less PY Advance Procurement (\$ <i>in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ <i>in Millions</i>)	168.759	233.439	599.274	558.107	0.000	558.107	484.337	441.728	423.591	432.023	627.562	3,968.820
Plus CY Advance Procurement (\$ <i>in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ <i>in Millions</i>)	168.759	233.439	599.274	558.107	0.000	558.107	484.337	441.728	423.591	432.023	627.562	3,968.820
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (\$ <i>in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ <i>in Dollars</i>)	259,017.34	270,982.92	263,374.54	266,354.08	-	266,354.08	285,529.58	303,246.48	304,506.38	308,597.70	-	331,706.32
Gross/Weapon System Unit Cost (\$ <i>in Dollars</i>)	487,742.77	442,958.25	364,965.90	399,218.17	-	399,218.17	454,776.53	444,394.37	450,628.72	451,434.69	-	504,361.42

Description:

Joint Light Tactical Vehicle (JLTV) Family of Vehicles (FoV) is a joint U.S. Army and U.S. Marine Corps program, of which the Army is the lead service. JLTV is a FoV capable of performing multiple mission roles that provides protected, sustained, networked mobility for personnel and payloads across the full Range of Military Operations (ROMO). JLTV features include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles are inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles					P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 0605812M, 0605813M			Other Related Program Elements: 0603635M, 0605812M, 0605813M				
Line Item MDAP/MAIS Code: 279										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Joint Light Tactical Vehicle	P-5a, P-21			346 / 168.759	527 / 233.439	1,642 / 599.274	1,398 / 558.107	- / 0.000	1,398 / 558.107
P-40	Total Gross/Weapon System Cost				346 / 168.759	527 / 233.439	1,642 / 599.274	1,398 / 558.107	- / 0.000	1,398 / 558.107
*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 Base Appropriation Request: \$233.439M. Projects included the procurement of 527 Low Rate Initial Production (LRIP) vehicles, kit procurement, development of publications, and technical data. The kits supported the baseline vehicle by providing the warfighter the ability to augment the vehicle's configuration to meet required vehicle capabilities such as fording, survivability, hot and cold weather operations, communications/C4I winches, etc, in order to respond to environmental conditions or threat situations. FY 2019 Base Appropriation Request: \$599.274M. Planned projects include the procurement of 1,642 LRIP vehicles, kit procurement, development of publications, and technical data. The kits will support the baseline vehicle by providing the warfighter the ability to augment the vehicle's configuration to meet required vehicle capabilities such as fording, survivability, hot and cold weather operations, communications/C4I winches, etc, in order to respond to environmental conditions or threat situations. The Full Rate Production (FRP) decision is planned for 3QTR FY19. Kits consist of mission essential equipment specific to each vehicle and variant and are necessary for the various operational requirements. Procurement includes up to 75 individual kits options for each vehicle. Kits may include, but are not limited to, armor kits required for force protection and survivability, tactical communications kits, which provide net-ready capabilities, and operational kits that complement base vehicle functionality to achieve requirements for tactical employment and mobility. FY 2020 Base Appropriation Request: \$558.107M. Planned projects include the procurement of 1,398 vehicles, kit procurement, development of publications and technical data, fielding, Performance Verification Testing (PVT), System Technical Support (STS), System Engineering and Program Management (SEPM), Engineering Change Orders (ECO)s and Interim Contractor Support (ICS). The kits will support the baseline vehicle by providing the warfighter the ability to augment the vehicle's configuration to meet required vehicle capabilities such as fording, survivability, hot and cold weather operations, communications/C4I winches, etc, in order to respond to environmental conditions or threat situations. Kits consist of mission essential equipment specific to each vehicle and variant and are necessary for the various operational requirements. Procurement includes up to 75 individual kits options for each vehicle. Kits may include, but are not limited to, armor kits required for force protection and survivability, tactical communications kits, which provide net-ready capabilities, and operational kits that complement base vehicle functionality to achieve requirements for tactical employment and mobility. The decrease (\$41.167M) in funding from FY 2019 to FY 2020 is due procurement of 244 fewer JLTVs and associated Engineering Change Orders/retrofits, based on available funding.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle						Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				346		527		1,642		1,398		-		1,398				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				168.759		233.439		599.274		558.107		0.000		558.107				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				168.759		233.439		599.274		558.107		0.000		558.107				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				168.759		233.439		599.274		558.107		0.000		558.107				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				487,742.77		442,958.25		364,965.90		399,218.17		-		399,218.17				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway - JLTV Cost																		
Recurring Cost																		
1.1.1) Heavy Guns Carrier ^(†)	254,666.67	198	50.424	260,242.42	33	8.588	254,907.89	532	135.611	260,071.00	765	198.954	-	-	-	260,071.00	765	198.954
1.1.2) General Purpose ^(†) (1)	269,275.00	40	10.771	259,400.00	115	29.831	252,337.66	385	97.150	259,237.00	444	115.101	-	-	-	259,237.00	444	115.101
1.1.3) Close Combat Weapons Carrier ^(†)	273,765.96	47	12.867	275,659.09	88	24.258	270,035.00	200	54.007	275,769.00	14	3.861	-	-	-	275,769.00	14	3.861
1.1.4) Utility ^(†)	255,049.18	61	15.558	248,828.18	291	72.409	243,904.76	525	128.050	248,725.00	175	43.527	-	-	-	248,725.00	175	43.527
1.1.5) Engineering Change Orders (ECO) ⁽²⁾	-	-	-	-	-	7.722	-	-	17.643	-	-	10.920	-	-	-	-	-	10.920
Subtotal: Recurring Cost	-	-	89.620	-	-	142.808	-	-	432.461	-	-	372.363	-	-	-	-	-	372.363
Subtotal: Flyaway - JLTV Cost	-	-	89.620	-	-	142.808	-	-	432.461	-	-	372.363	-	-	-	-	-	372.363
Hardware Cost																		
Recurring Cost																		
2.1.1) Kits ⁽³⁾	-	-	20.882	-	-	37.027	-	-	107.855	-	-	117.513	-	-	-	-	-	117.513
2.1.2) Trailers ⁽⁴⁾	-	-	-	-	-	-	-	-	-	-	-	0.203	-	-	-	-	-	0.203
Subtotal: Recurring Cost	-	-	20.882	-	-	37.027	-	-	107.855	-	-	117.716	-	-	-	-	-	117.716
Subtotal: Hardware Cost	-	-	20.882	-	-	37.027	-	-	107.855	-	-	117.716	-	-	-	-	-	117.716
Support - Support Costs Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2						P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle							Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle					
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
3.1) Interim Contract support (ICS) ⁽⁵⁾	-	-	-	-	-	-	-	-	5.944	-	-	7.346	-	-	-	-	-	7.346
3.2) Program Management ⁽⁶⁾	-	-	7.799	-	-	11.018	-	-	10.567	-	-	9.434	-	-	-	-	-	9.434
3.3) Contractor SEPM ⁽⁷⁾	-	-	9.505	-	-	6.899	-	-	2.680	-	-	2.743	-	-	-	-	-	2.743
3.4) System Technical Support (STS) ⁽⁸⁾	-	-	15.744	-	-	10.538	-	-	11.413	-	-	11.428	-	-	-	-	-	11.428
3.5) Test Support ⁽⁹⁾	-	-	24.180	-	-	6.439	-	-	3.208	-	-	2.113	-	-	-	-	-	2.113
3.6) Publications/ Technical Data	-	-	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7) Fielding ⁽¹⁰⁾	-	-	0.029	-	-	14.929	-	-	23.919	-	-	34.597	-	-	-	-	-	34.597
3.8) Training Aids, Devices, Simulators and Simulations (TADSS) ⁽¹¹⁾	-	-	-	-	-	3.781	-	-	1.227	-	-	0.367	-	-	-	-	-	0.367
Subtotal: Support - Support Costs Cost	-	-	58.257	-	-	53.604	-	-	58.958	-	-	68.028	-	-	-	-	-	68.028
Gross/Weapon System Cost	487,742.77	346	168.759	442,958.25	527	233.439	364,965.90	1,642	599.274	399,218.17	1,398	558.107	-	-	0.000	399,218.17	1,398	558.107

(t) indicates the presence of a P-5a

Footnotes:

(1) The JLTV LRIP and FRP production contract was competitively awarded to Oshkosh Defense in 2015. The contract between the Government and Oshkosh includes priced option years through the end of the first contract period (Base plus 8 options). These contracted prices are not negotiable on a year to year basis. Vehicle and kit costs are based on the firm fixed price contract cost, quantity ranges, and option year. These ranges are dependent on total quantities procured across all Services based on both platform and variant. The unit costs are based on contract pricing of the manufacturer's projected overhead and commodities forecast (i.e. raw materials, petroleum, and forward pricing rate agreements with labor unions) and are reflected in the contract. The Government agreed to these fixed and non-negotiable prices at the time of the competitively awarded JLTV production contract. The production rates provided in this exhibit are annual estimates. Oshkosh's main production line is not wholly JLTV and has been set up to run multiple other Military Tactical and Commercial Business vehicles on the same line during the same shift. As such they do not have a unique JLTV 1-8-5.

(2) Funding decrease from FY19 to FY20 of \$6.723M is a result of stabilizing Engineering Change Orders (ECOs) and retro fit of design changes to vehicles produced and delivered in FY15-FY19 based on results from observations during manufacture on the production line and thru operational assessments.

(3) Funding increase from FY19 to FY20 of \$9.658M is due to the additional procurement of GFE A kits such as DAGR, Roof Hatch, TOGPK 1.0, ITDS, turret ring and hatch and ground radio kits. All kit costs are based on actual contract pricing that will not change and is not negotiable. Kits consist of mission essential equipment specific to each vehicle and variant and are necessary for the various operational requirements. Procurement includes up to 75 individual kit options for each individual vehicle. Kits may include, but are not limited to, armor kits required for force protection and survivability, tactical communications kits, which provide net-ready capabilities, and operational kits that complement base vehicle functionality to achieve requirements for tactical employment and mobility. Final kit procurement density is subject to change and based on operational and mission profile at time of award.

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2	P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle	Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(4) JLTV companion trailer is purpose built to comply with JLTV requirements for mobility and payload. Infantry battalion expeditionary mobility will be improved by pairing JLTV with its companion trailer, enabling the unit to keep pace with vehicle formations. The increase of \$.203M in FY20 procures three trailers to support Production Verification Testing (PVT). (5) Funding increase from FY19 to FY20 of \$1.402M is due to the increase of Interim Contract Support (ICS) to support the cumulative fielded JLTV vehicles. ICS provides vendor support for maintenance and repair of JLTVs between initial fielding in FY19 and the transition of sustainment to an organic capability planned to begin in FY22. ICS continues in support of Operator New Equipment Training (OPNET) through FY23. (6) Funding decrease from FY19 to FY20 of \$1.133M is due to decreased program management support as JLTV requirements stabilize during initial fielding. Program management includes the Government Systems Integration Laboratory operations in support of fielding requirements and the addition of Liaison Officers on-site at each MEF providing support for MEF mission readiness, and the resolution of maintenance related issues. The Liaison Officers coordinate between OPFORs, the JLTV program office, logistics managers and the vehicle manufacturer. (7) Funding increase for Contractor SEPM costs from FY19 and FY20 of \$0.063M is a result of continued system engineering oversight of the production line as production ramp-up occurs. (8) Funding increase from FY19 to FY20 of \$0.015M to support non-recurring engineering efforts to develop potential changes identified during testing and user experiences such as Multi-service Operational Test and Evaluation (MOT&E). STS provides for all services and supplies requested to accomplish Engineering, Configuration Management, Quality Assurance, Integrated Product Support, maintenance, training, and testing associated with Government-initiated changes and improvements to the production vehicles, logistics products, and fielding of the JLTV. In accordance with the Joint Cost Position approved methodologies, future JLTV STS work was developed as an analogy based upon a study of multiple legacy tactical wheeled vehicles. (9) Funding decrease from FY19 to FY20 of \$1.095M is a result of the completion of the majority of Corrosion Testing, Performance testing and follow-on reliability testing requirements pre- Full Rate Production (FRP) decision. (10) Funding increase from FY19 to FY20 of \$10.678M is due to the costs associated with the Total Package Fielding (TPF) of JLTVs to operational forces. The cost of TPF includes the shipment of vehicles, First Destination Transportation (FDT) kits, and all ancillary equipment required to conduct initial fielding and training to receiving units. Costs also include travel and labor for 3 fielding teams to conduct concurrent fielding events at multiple USMC bases and stations around the globe. (11) Funding decrease from FY19 to FY20 of \$0.860M is due to the diminishing need of the installation and training of Training Aids, Devices, and Simulators and Simulations (TADSS) for war fighters as the program begins Initial Operating Capability (IOC) in 1st QTR FY20. TADSS devices support vehicle fielding and improve operator safety, survivability, and vehicle maintainability.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity:				P-1 Line Item Number / Title:				Item Number / Title [DODIC]:				
1109N / 05 / 2				5095 / Joint Light Tactical Vehicle				1 / Joint Light Tactical Vehicle				
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) Heavy Guns Carrier ^(†)		2016	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Mar 2016	Jan 2017	66	249,970.00	Y		
1.1.1) Heavy Guns Carrier ^(†)		2017	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2016	Oct 2017	132	257,012.12	Y		
1.1.1) Heavy Guns Carrier ^(†)		2018	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2017	Oct 2018	33	260,242.42	Y		
1.1.1) Heavy Guns Carrier ^(†)		2019	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2018	Oct 2019	532	254,907.89	Y		
1.1.1) Heavy Guns Carrier ^(†)		2020	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2019	Oct 2020	765	260,071.00	Y		
1.1.2) General Purpose ^(†)		2015	Oshkosh Defense LLC ⁽¹²⁾ / Oshkosh WI	C / FFP	TACOM	Aug 2015	Sep 2016	6	332,000.00	Y		Dec 2014
1.1.2) General Purpose ^(†)		2016	Oshkosh Defense LLC ⁽¹²⁾ / Oshkosh WI	C / FFP	TACOM	Mar 2016	Jan 2017	24	258,721.00	Y		
1.1.2) General Purpose ^(†)		2017 ⁽¹³⁾	Oshkosh Defense LLC ⁽¹²⁾ / Oshkosh WI	C / FFP	TACOM	Dec 2016	Oct 2017	10	257,012.12	Y		
1.1.2) General Purpose ^(†)		2018 ⁽¹⁴⁾	Oshkosh Defense LLC ⁽¹²⁾ / Oshkosh WI	C / FFP	TACOM	Dec 2017	Oct 2018	115	259,400.00	Y		
1.1.2) General Purpose ^(†)		2019	Oshkosh Defense LLC ⁽¹²⁾ / Oshkosh WI	C / FFP	TACOM	Dec 2018	Oct 2019	385	252,337.66	Y		
1.1.2) General Purpose ^(†)		2020	Oshkosh Defense LLC ⁽¹²⁾ / Oshkosh WI	C / FFP	TACOM	Dec 2019	Oct 2020	444	259,237.00	Y		
1.1.3) Close Combat Weapons Carrier ^(†)		2016	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Mar 2016	Jan 2017	23	286,944.00	Y		
1.1.3) Close Combat Weapons Carrier ^(†)		2017	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2016	Oct 2017	24	261,109.05	Y		
1.1.3) Close Combat Weapons Carrier ^(†)		2018	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2017	Oct 2018	88	275,659.09	Y		
1.1.3) Close Combat Weapons Carrier ^(†)		2019	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2018	Oct 2019	200	270,035.00	Y		
1.1.3) Close Combat Weapons Carrier ^(†)		2020	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2019	Oct 2020	14	275,769.00	Y		
1.1.4) Utility ^(†)		2016	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Mar 2016	Jan 2017	15	281,014.00	Y		
1.1.4) Utility ^(†)		2017	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2016	Oct 2017	46	246,576.80	Y		
1.1.4) Utility ^(†)		2018	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2017	Oct 2018	291	248,828.18	Y		
1.1.4) Utility ^(†)		2019	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2018	Oct 2019	525	243,904.76	Y		
1.1.4) Utility ^(†)		2020	Oshkosh Defense LLC / Oshkosh, WI	C / FFP	TACOM	Dec 2019	Oct 2020	175	248,725.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2	P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle	Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle

(†) indicates the presence of a P-21 Footnotes: (12) MS C and contract award occurred on 25 August 2015. Production rates for the JLTV variants are shown as annual rates. (13) Due to quantity and budget limitation of the Continuing Resolution, JLTV quantities were procured in multiple contract awards.. 106 vehicles were procured in Dec 2016 and 106 vehicles were procured in Jul 2017. (14) Due to quantity and budget limitation of the Continuing Resolution, JLTV quantities were procured in multiple contract awards.. 192 vehicles were procured in Dec 2017. The balance of 335 vehicles procured in June 2018.		

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2										P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle										Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle																		
Cost Elements (Units in Each)							Fiscal Year 2015										Fiscal Year 2016										B A L A N C E											
O C C O	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 4	B A L D U E A S O F 1 O C T	Calendar Year 2015										Calendar Year 2016																					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P							
1.1.1) Heavy Guns Carrier																																						
	1	2016	NAVY	66	0	66																		A -	-	-	-	-	-	-	-						66	
	1	2016	ARMY (‡)	69	0	69																		A -	-	-	-	-	-	-	-						69	
	1	2016	Total	135	0	135																		-	-	-	-	-	-	-	-						135	
	1	2017	NAVY	132	0	132																												132				
	1	2017	ARMY (‡)	279	0	279																												279				
	1	2017	Total	411	0	411																												411				
	1	2018	NAVY	33	0	33																												33				
	1	2018	ARMY (‡)	265	0	265																												265				
	1	2018	Total	298	0	298																												298				
	1	2019	NAVY	532	0	532																												532				
	1	2019	ARMY (‡)	507	0	507																												507				
	1	2019	Total	1,039	0	1,039																												1,039				
	1	2020	NAVY	765	0	765																												765				
	1	2020	ARMY (‡)	876	0	876																												876				
	1	2020	Total	1,641	0	1,641																												1,641				
1.1.2) General Purpose (1)																																						
	2	2015	NAVY	6	0	6											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5			
	2	2015	ARMY (‡)	126	0	126											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	116				
	2	2015	Total	132	0	132											-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	121					
	2	2016	NAVY	24	0	24																		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	24
	2	2016	ARMY (‡)	377	0	377																		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	377
	2	2016	Total	401	0	401																		-	-	-	-	-	-	-	-	-	-	-	-	-	-	401
	2	2017	NAVY	10	0	10																												10				
	2	2017	ARMY (‡)	607	0	607																												607				
	2	2017	Total	617	0	617																												617				
	2	2018	NAVY	115	0	115																												115				
	2	2018	ARMY (‡)	918	0	918																												918				
	2	2018	Total	1,033	0	1,033																												1,033				
	2	2019	NAVY	385	0	385																												385				
	2	2019	ARMY (‡)	1,029	0	1,029																												1,029				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2										P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle										Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle																								
Cost Elements (Units in Each)							Fiscal Year 2015										Fiscal Year 2016														B A L A N C E													
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015										Calendar Year 2016																											
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P														
2	2019		Total	1,414	0	1,414																													1,414									
2	2020		NAVY	444	0	444																													444									
2	2020		ARMY (‡)	1,092	0	1,092																													1,092									
2	2020		Total	1,536	0	1,536																													1,536									
1.1.3) Close Combat Weapons Carrier																																												
3	2016		NAVY	23	0	23																					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
3	2016		ARMY (‡)	42	0	42																					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	
3	2016		Total	65	0	65																					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	
3	2017		NAVY	24	0	24																													24									
3	2017		ARMY (‡)	56	0	56																													56									
3	2017		Total	80	0	80																													80									
3	2018		NAVY	88	0	88																													88									
3	2018		ARMY (‡)	102	0	102																													102									
3	2018		Total	190	0	190																													190									
3	2019		NAVY	200	0	200																													200									
3	2019		ARMY (‡)	117	0	117																													117									
3	2019		Total	317	0	317																													317									
3	2020		NAVY	14	0	14																													14									
3	2020		ARMY (‡)	120	0	120																													120									
3	2020		Total	134	0	134																													134									
1.1.4) Utility																																												
4	2016		NAVY	15	0	15																					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
4	2016		ARMY (‡)	165	0	165																					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	165	
4	2016		Total	180	0	180																					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	
4	2017		NAVY	46	0	46																													46									
4	2017		ARMY (‡)	649	0	649																													649									
4	2017		Total	695	0	695																													695									
4	2018		NAVY	291	0	291																													291									
4	2018		ARMY (‡)	803	0	803																													803									
4	2018		Total	1,094	0	1,094																													1,094									
4	2019		NAVY	525	0	525																													525									
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P														

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle													Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle															
Cost Elements (Units in Each)							Fiscal Year 2015													Fiscal Year 2016													B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015													Calendar Year 2016															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
	4	2019	ARMY (+)	1,737	0	1,737																													1,737
	4	2019	Total	2,262	0	2,262																													2,262
	4	2020	NAVY	175	0	175																													175
	4	2020	ARMY (+)	456	0	456																													456
	4	2020	Total	631	0	631																													631
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2020 Navy																					Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2										P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle											Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle																
Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018														B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017												Calendar Year 2018																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
1.1.1) Heavy Guns Carrier																																					
	1	2016	NAVY	66	0	66	-	-	-	5	5	5	5	5	5	6	6	6	6	6	6											0					
	1	2016	ARMY (‡)	69	0	69	-	-	-	5	5	5	6	6	6	6	6	6	6	6											0						
	1	2016	Total	135	0	135	-	-	-	10	10	10	11	11	11	12	12	12	12	12	12	-	-	-	-	-	-	-	-	-	-	0					
	1	2017	NAVY	132	0	132						A	-	-	-	-	-	-	-	11	11	11	11	11	11	11	11	11	11	11	0						
	1	2017	ARMY (‡)	279	0	279						A	-	-	-	-	-	-	-	23	23	23	23	23	23	23	23	23	24	24	24	0					
	1	2017	Total	411	0	411						-	-	-	-	-	-	-	-	34	34	34	34	34	34	34	34	34	35	35	35	0					
	1	2018	NAVY	33	0	33																A	-	-	-	-	-	-	-	-	-	-	-	-	-	33	
	1	2018	ARMY (‡)	265	0	265																A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265
	1	2018	Total	298	0	298																-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	298
	1	2019	NAVY	532	0	532																											532				
	1	2019	ARMY (‡)	507	0	507																											507				
	1	2019	Total	1,039	0	1,039																											1,039				
	1	2020	NAVY	765	0	765																											765				
	1	2020	ARMY (‡)	876	0	876																											876				
	1	2020	Total	1,641	0	1,641																											1,641				
1.1.2) General Purpose (1)																																					
	2	2015	NAVY	6	1	5	1	1	1	1	1	-	-	-	-	-	-																0				
	2	2015	ARMY (‡)	126	10	116	10	10	10	10	10	11	11	11	11	11	11																0				
	2	2015	Total	132	11	121	11	11	11	11	11	11	11	11	11	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	2	2016	NAVY	24	0	24	-	-	-	1	2	2	2	2	2	2	2	2	3											0							
	2	2016	ARMY (‡)	377	0	377	-	-	-	31	31	31	31	31	31	31	32	32	32	32											0						
	2	2016	Total	401	0	401	-	-	-	32	33	33	33	33	33	33	34	34	34	35	-	-	-	-	-	-	-	-	-	-	0						
	2	2017	NAVY	10	0	10						A	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	-	-	0						
	2	2017	ARMY (‡)	607	0	607						A	-	-	-	-	-	-	-	50	50	50	50	50	51	51	51	51	51	51	0						
	2	2017	Total	617	0	617						-	-	-	-	-	-	-	-	51	51	51	51	51	52	52	52	52	52	51	51	0					
	2	2018	NAVY	115	0	115																A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115
	2	2018	ARMY (‡)	918	0	918																A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	918
	2	2018	Total	1,033	0	1,033																-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,033
	2	2019	NAVY	385	0	385																											385				
	2	2019	ARMY (‡)	1,029	0	1,029																											1,029				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2										P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle										Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle																
Cost Elements (Units in Each)							Fiscal Year 2017										Fiscal Year 2018														B A L A N C E					
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2016	BAL DUE AS OF 1 OCT	O C T	N O V	D E C	Calendar Year 2017										Calendar Year 2018																
										J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
2	2019	Total		1,414	0	1,414																											1,414			
2	2020	NAVY		444	0	444																											444			
2	2020	ARMY (‡)		1,092	0	1,092																											1,092			
2	2020	Total		1,536	0	1,536																											1,536			
1.1.3) Close Combat Weapons Carrier																																				
3	2016	NAVY		23	0	23	-	-	-	1	2	2	2	2	2	2	2	2	2	2													0			
3	2016	ARMY (‡)		42	0	42	-	-	-	3	3	3	3	3	3	4	4	4	4	4	4												0			
3	2016	Total		65	0	65	-	-	-	4	5	5	5	5	5	6	6	6	6	6	6	-	-	-	-	-	-	-	-	-	-	-	0			
3	2017	NAVY		24	0	24			A -	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0			
3	2017	ARMY (‡)		56	0	56			A -	-	-	-	-	-	-	-	-	-	4	4	4	4	5	5	5	5	5	5	5	5	5	5	0			
3	2017	Total		80	0	80			-	-	-	-	-	-	-	-	-	-	6	6	6	6	7	7	7	7	7	7	7	7	7	7	0			
3	2018	NAVY		88	0	88														A -	-	-	-	-	-	-	-	-	-	-	-	-	88			
3	2018	ARMY (‡)		102	0	102														A -	-	-	-	-	-	-	-	-	-	-	-	-	102			
3	2018	Total		190	0	190														-	-	-	-	-	-	-	-	-	-	-	-	-	190			
3	2019	NAVY		200	0	200																											200			
3	2019	ARMY (‡)		117	0	117																											117			
3	2019	Total		317	0	317																											317			
3	2020	NAVY		14	0	14																											14			
3	2020	ARMY (‡)		120	0	120																											120			
3	2020	Total		134	0	134																											134			
1.1.4) Utility																																				
4	2016	NAVY		15	0	15	-	-	-	1	1	1	1	1	1	1	1	1	2	2	2												0			
4	2016	ARMY (‡)		165	0	165	-	-	-	13	13	13	14	14	14	14	14	14	14	14	14												0			
4	2016	Total		180	0	180	-	-	-	14	14	14	15	15	15	15	15	15	16	16	16	-	-	-	-	-	-	-	-	-	-	-	0			
4	2017	NAVY		46	0	46			A -	-	-	-	-	-	-	-	-	-	3	3	4	4	4	4	4	4	4	4	4	4	4	4	0			
4	2017	ARMY (‡)		649	0	649			A -	-	-	-	-	-	-	-	-	-	54	54	54	54	54	54	54	54	54	54	54	54	55	55	0			
4	2017	Total		695	0	695			-	-	-	-	-	-	-	-	-	-	57	57	58	58	58	58	58	58	58	58	58	58	59	59	0			
4	2018	NAVY		291	0	291														A -	-	-	-	-	-	-	-	-	-	-	-	-	291			
4	2018	ARMY (‡)		803	0	803														A -	-	-	-	-	-	-	-	-	-	-	-	-	803			
4	2018	Total		1,094	0	1,094														-	-	-	-	-	-	-	-	-	-	-	-	-	1,094			
4	2019	NAVY		525	0	525																											525			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle												Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle																
Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												B A L A N C E				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
	4	2019	ARMY (+)	1,737	0	1,737																													1,737
	4	2019	Total	2,262	0	2,262																													2,262
	4	2020	NAVY	175	0	175																													175
	4	2020	ARMY (+)	456	0	456																													456
	4	2020	Total	631	0	631																													631
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2										P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle													Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle													
Cost Elements (Units in Each)							Fiscal Year 2019													Fiscal Year 2020													B A L A N C E			
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT				Calendar Year 2019													Calendar Year 2020													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
1.1.1) Heavy Guns Carrier																																				
	1	2016	NAVY	66	66	0																												0		
	1	2016	ARMY (‡)	69	69	0																												0		
	1	2016	Total	135	135	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	1	2017	NAVY	132	132	0																												0		
	1	2017	ARMY (‡)	279	279	0																												0		
	1	2017	Total	411	411	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	1	2018	NAVY	33	0	33	2	2	2	3	3	3	3	3	3	3	3																0			
	1	2018	ARMY (‡)	265	0	265	22	22	22	22	22	22	22	22	22	23																0				
	1	2018	Total	298	0	298	24	24	24	25	25	25	25	25	25	25	26	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	1	2019	NAVY	532	0	532	A -			-	-	-	-	-	-	-	-	44	44	44	44	44	44	44	44	45	45	45	45	0						
	1	2019	ARMY (‡)	507	0	507	A -			-	-	-	-	-	-	-	-	42	42	42	42	42	42	42	42	42	43	43	43	0						
	1	2019	Total	1,039	0	1,039	-			-	-	-	-	-	-	-	-	86	86	86	86	86	86	86	86	87	88	88	88	0						
	1	2020	NAVY	765	0	765																A -	-	-	-	-	-	-	-	-	-	-	-	-	765	
	1	2020	ARMY (‡)	876	0	876																A -	-	-	-	-	-	-	-	-	-	-	-	-	-	876
	1	2020	Total	1,641	0	1,641																-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,641
1.1.2) General Purpose (1)																																				
	2	2015	NAVY	6	6	0																												0		
	2	2015	ARMY (‡)	126	126	0																												0		
	2	2015	Total	132	132	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	2	2016	NAVY	24	24	0																												0		
	2	2016	ARMY (‡)	377	377	0																												0		
	2	2016	Total	401	401	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	2	2017	NAVY	10	10	0																												0		
	2	2017	ARMY (‡)	607	607	0																												0		
	2	2017	Total	617	617	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	2	2018	NAVY	115	0	115	9	9	9	9	9	10	10	10	10	10	10																0			
	2	2018	ARMY (‡)	918	0	918	76	76	76	76	76	76	77	77	77	77	77																0			
	2	2018	Total	1,033	0	1,033	85	85	85	85	85	86	87	87	87	87	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
	2	2019	NAVY	385	0	385	A -			-	-	-	-	-	-	-	-	32	32	32	32	32	32	32	32	32	32	32	33	0						
	2	2019	ARMY (‡)	1,029	0	1,029	A -			-	-	-	-	-	-	-	-	85	85	85	86	86	86	86	86	86	86	86	86	0						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle												Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2019										Fiscal Year 2020										BALANCE					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019										Calendar Year 2020															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P	
	2	2019	Total	1,414	0	1,414				-	-	-	-	-	-	-	-	117	117	117	118	118	118	118	118	118	118	118	119	0		
	2	2020	NAVY	444	0	444														A -	-	-	-	-	-	-	-	-	-	444		
	2	2020	ARMY ^(‡)	1,092	0	1,092														A -	-	-	-	-	-	-	-	-	-	1,092		
	2	2020	Total	1,536	0	1,536														-	-	-	-	-	-	-	-	-	-	1,536		
1.1.3) Close Combat Weapons Carrier																																
	3	2016	NAVY	23	23	0																								0		
	3	2016	ARMY ^(‡)	42	42	0																								0		
	3	2016	Total	65	65	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	3	2017	NAVY	24	24	0																								0		
	3	2017	ARMY ^(‡)	56	56	0																								0		
	3	2017	Total	80	80	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	3	2018	NAVY	88	0	88	7	7	7	7	7	7	7	7	8	8	8	8												0		
	3	2018	ARMY ^(‡)	102	0	102	8	8	8	8	8	8	9	9	9	9	9	9												0		
	3	2018	Total	190	0	190	15	15	15	15	15	15	16	16	17	17	17	17	-	-	-	-	-	-	-	-	-	-	-	0		
	3	2019	NAVY	200	0	200			A -	-	-	-	-	-	-	-	-	-	17	17	17	17	17	17	17	17	16	16	16	0		
	3	2019	ARMY ^(‡)	117	0	117			A -	-	-	-	-	-	-	-	-	-	9	9	9	10	10	10	10	10	10	10	10	0		
	3	2019	Total	317	0	317			-	-	-	-	-	-	-	-	-	-	26	26	26	27	27	27	27	27	26	26	26	0		
	3	2020	NAVY	14	0	14															A -	-	-	-	-	-	-	-	-	14		
	3	2020	ARMY ^(‡)	120	0	120															A -	-	-	-	-	-	-	-	-	120		
	3	2020	Total	134	0	134															-	-	-	-	-	-	-	-	-	134		
1.1.4) Utility																																
	4	2016	NAVY	15	15	0																								0		
	4	2016	ARMY ^(‡)	165	165	0																								0		
	4	2016	Total	180	180	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	4	2017	NAVY	46	46	0																								0		
	4	2017	ARMY ^(‡)	649	649	0																								0		
	4	2017	Total	695	695	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	4	2018	NAVY	291	0	291	24	24	24	24	24	24	24	24	24	25	25	25												0		
	4	2018	ARMY ^(‡)	803	0	803	66	67	67	67	67	67	67	67	67	67	67	67												0		
	4	2018	Total	1,094	0	1,094	90	91	91	91	91	91	91	91	91	92	92	92	-	-	-	-	-	-	-	-	-	-	-	0		
	4	2019	NAVY	525	0	525			A -	-	-	-	-	-	-	-	-	-	43	43	43	44	44	44	44	44	44	44	44	0		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P		

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle												Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle												
Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												B A L A N C E
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	
	4	2019	ARMY (‡)	1,737	0	1,737			A -	-	-	-	-	-	-	-	-	144	144	144	145	145	145	145	145	145	145	145	145	145	0
	4	2019	Total	2,262	0	2,262			-	-	-	-	-	-	-	-	-	187	187	187	189	189	189	189	189	189	189	189	189	189	0
	4	2020	NAVY	175	0	175														A -	-	-	-	-	-	-	-	-	-	-	175
	4	2020	ARMY (‡)	456	0	456														A -	-	-	-	-	-	-	-	-	-	-	456
	4	2020	Total	631	0	631														-	-	-	-	-	-	-	-	-	-	-	631
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2									P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle										Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle														
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021										Fiscal Year 2022										B A L A N C E						
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 0	BAL D U E A S O F 1 O C T				Calendar Year 2021										Calendar Year 2022													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P		
1.1.1) Heavy Guns Carrier																																	
	1	2016	NAVY	66	66	0																											0
	1	2016	ARMY (‡)	69	69	0																											0
	1	2016	Total	135	135	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2017	NAVY	132	132	0																											0
	1	2017	ARMY (‡)	279	279	0																											0
	1	2017	Total	411	411	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2018	NAVY	33	33	0																											0
	1	2018	ARMY (‡)	265	265	0																											0
	1	2018	Total	298	298	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2019	NAVY	532	532	0																											0
	1	2019	ARMY (‡)	507	507	0																											0
	1	2019	Total	1,039	1,039	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2020	NAVY	765	0	765	63	63	63	64	64	64	64	64	64	64	64											0					
	1	2020	ARMY (‡)	876	0	876	73	73	73	73	73	73	73	73	73	73	73											0					
	1	2020	Total	1,641	0	1,641	136	136	136	137	137	137	137	137	137	137	137	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
1.1.2) General Purpose (1)																																	
	2	2015	NAVY	6	6	0																											0
	2	2015	ARMY (‡)	126	126	0																											0
	2	2015	Total	132	132	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2016	NAVY	24	24	0																											0
	2	2016	ARMY (‡)	377	377	0																											0
	2	2016	Total	401	401	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2017	NAVY	10	10	0																											0
	2	2017	ARMY (‡)	607	607	0																											0
	2	2017	Total	617	617	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2018	NAVY	115	115	0																											0
	2	2018	ARMY (‡)	918	918	0																											0
	2	2018	Total	1,033	1,033	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2019	NAVY	385	385	0																											0
	2	2019	ARMY (‡)	1,029	1,029	0																											0
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2										P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle										Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle															
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021											Fiscal Year 2022														BALANCE			
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT				Calendar Year 2021											Calendar Year 2022														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
2	2019	Total		1,414	1,414	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0					
2	2020	NAVY		444	0	444	37	37	37	37	37	37	37	37	37	37	37	37															0		
	2	2020	ARMY ^(‡)	1,092	0	1,092	91	91	91	91	91	91	91	91	91	91	91															0			
	2	2020	Total	1,536	0	1,536	128	128	128	128	128	128	128	128	128	128	128	-	-	-	-	-	-	-	-	-	-	-	-	0					
1.1.3) Close Combat Weapons Carrier																																			
	3	2016	NAVY	23	23	0																									0				
	3	2016	ARMY ^(‡)	42	42	0																									0				
	3	2016	Total	65	65	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	3	2017	NAVY	24	24	0																									0				
	3	2017	ARMY ^(‡)	56	56	0																									0				
	3	2017	Total	80	80	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	3	2018	NAVY	88	88	0																									0				
	3	2018	ARMY ^(‡)	102	102	0																									0				
	3	2018	Total	190	190	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	3	2019	NAVY	200	200	0																									0				
	3	2019	ARMY ^(‡)	117	117	0																									0				
	3	2019	Total	317	317	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	3	2020	NAVY	14	0	14	1	1	1	1	1	1	1	1	1	1	2	2															0		
	3	2020	ARMY ^(‡)	120	0	120	10	10	10	10	10	10	10	10	10	10	10															0			
	3	2020	Total	134	0	134	11	11	11	11	11	11	11	11	11	12	12	-	-	-	-	-	-	-	-	-	-	-	-	0					
1.1.4) Utility																																			
	4	2016	NAVY	15	15	0																									0				
	4	2016	ARMY ^(‡)	165	165	0																									0				
	4	2016	Total	180	180	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	4	2017	NAVY	46	46	0																									0				
	4	2017	ARMY ^(‡)	649	649	0																									0				
	4	2017	Total	695	695	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	4	2018	NAVY	291	291	0																									0				
	4	2018	ARMY ^(‡)	803	803	0																									0				
	4	2018	Total	1,094	1,094	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0						
	4	2019	NAVY	525	525	0																									0				
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																		Date: March 2019																	
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2							P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle										Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle																		
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021										Fiscal Year 2022										BALANCE								
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P				
	4	2019	ARMY ^(†)	1,737	1,737	0																													0
	4	2019	Total	2,262	2,262	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
	4	2020	NAVY	175	0	175	14	14	14	14	14	15	15	15	15	15	15											0							
	4	2020	ARMY ^(†)	456	0	456	38	38	38	38	38	38	38	38	38	38	38											0							
	4	2020	Total	631	0	631	52	52	52	52	52	53	53	53	53	53	53	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2				P-1 Line Item Number / Title: 5095 / Joint Light Tactical Vehicle					Item Number / Title [DODIC]: 1 / Joint Light Tactical Vehicle		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	Oshkosh Defense LLC - Oshkosh, WI	12	696	2,820	0	10	10	20	0	3	10	13
2	Oshkosh Defense LLC ⁽¹²⁾ - Oshkosh WI	12	696	2,820	0	10	10	20	0	3	10	13
3	Oshkosh Defense LLC - Oshkosh, WI	12	696	2,820	0	10	10	20	0	3	10	13
4	Oshkosh Defense LLC - Oshkosh, WI	12	696	2,820	0	10	10	20	0	3	10	13

(‡) Delivery rows marked with this symbol indicate that they are funded through a separate Line Item. See the respective components' exhibits for details, including the full delivery schedule.

"A" in the Delivery Schedule indicates the Contract Award Date.

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

Footnotes:

⁽¹²⁾ MS C and contract award occurred on 25 August 2015. Production rates for the JLTV variants are shown as annual rates.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles						P-1 Line Item Number / Title: 5097 / Family of Tactical Trailers					

ID Code (A=Service Ready, B=Not Service Ready): A										Program Elements for Code B Items: N/A										Other Related Program Elements: 0206624M									
Line Item MDAP/MAIS Code: N/A																													

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	149.656	1.668	2.393	2.693	0.000	2.693	3.146	10.209	3.283	3.349	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	149.656	1.668	2.393	2.693	0.000	2.693	3.146	10.209	3.283	3.349	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	149.656	1.668	2.393	2.693	0.000	2.693	3.146	10.209	3.283	3.349	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Family of Tactical Trailers (FTT) encompasses equipment upgrades and changes made to fielded trailers.

Family of Tactical Trailers provides for the procurement and support of trailers primarily in the medium and heavy fleet to enhance Marine Corps tactical vehicle mobility capability. This program supports various medium and heavy trailers as well as light, to include the M1076 PLS (Palletized Load System) Trailer, the MK1077 Flatrack for the PLS Trailer and LVSR; MK593 Medium Tactical Vehicle Replacement (MTVR) Trailer; M870 40/50 Ton Low Bed, MK970 Tactical Refueler, M149A2 400 Gallon Water Tank Trailer, MK38 HIMARS Re-Supply Trailer, MK970 5,000 Gallon Semitrailer, and the Flatrack Refueler Capability (FRC).

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.006	1.725	2.010	-	2.010	2.448	9.497	2.556	2.607
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.662	0.668	0.683	-	0.683	0.698	0.712	0.727	0.742
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.668	2.393	2.693	-	2.693	3.146	10.209	3.283	3.349

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 05: Support Vehicles / BSA 2: Tactical Vehicles						P-1 Line Item Number / Title: 5097 / Family of Tactical Trailers				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Family of Tactical Trailers				- / 149.656	- / 1.668	- / 2.393	- / 2.693	- / -	- / 2.693
P-40	Total Gross/Weapon System Cost				- / 149.656	- / 1.668	- / 2.393	- / 2.693	- / 0.000	- / 2.693
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Base Appropriation Request: \$1.668M (\$1.018 Active; \$0.650M Reserve) Funds in the amount of \$1.668M supported the ECPs for the fleet of MK970 4,000 gallon Refuelers, to include procurement of the parts and kits to incorporate the new pump engine and exhaust. FY 2019 Base Appropriation Request: \$2.393M (\$1.725 Active; \$0.668M Reserve) Funds in the amount of \$2.393M supports procurement and installation of safety and performance Engineering Change Proposals (ECPs) to modify the Medium and Heavy Tactical Trailer Fleet of Vehicles, including the Palletized Load System Trailer (PLST), M870 (40 & 50 ton trailers), MK1077 (Flatrack), MK970, MTRV MK593 Trailer and Flatrack Refueling Capability (FRC) to enable the operating forces to tow required bulk and liquid cargo within the mission profile of the MTRV and LVSR prime movers. FY 2020 Base Appropriation Request: \$2.693M (\$2.010M Active; \$0.683M Reserve) Funds in the amount of \$2.693M will support procurement and installation of safety and performance Engineering Change Proposals (ECPs) to modify the Medium and Heavy Tactical Trailer Fleets, including the Palletized Load System Trailer (PLST), M870 (40 & 50 ton trailers), MK1077 (Flatrack), MK970, MTRV MK593 Trailer and Flatrack Refueling Capability (FRC). Many of these trailer systems were procured prior to or separate of the MTRV and LVSR, do not match the off-road capabilities of those prime movers, but can be improved with modification. Funding will also support procuring various ECPs, such as those addressing corrosion and safety changes by incorporating drain holes, corrosion resistant materials, and improved safety chains. The increase in funding of \$0.300M from FY 2019 to FY 2020 reflects a reprioritization by the Marine Corps towards these efforts, particularly for an ECP to address ground clearance issues for the M870 Heavy Lift trailer. The ECPs will provide the M870 with improved off-road mobility and increased reliability.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 05 / 2						P-1 Line Item Number / Title: 5097 / Family of Tactical Trailers						Aggregated Items Title: Family of Tactical Trailers								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Family of Tactical Trailers (FTT)																				
1.1) Heavy Trailer (ECP) ⁽¹⁾			-	-	4.999	-	-	0.346	-	-	0.853	-	-	1.138	-	-	-	-	-	1.138
1.2) Medium Trailer (ECP)			-	-	0.976	-	-	0.672	-	-	0.872	-	-	0.872	-	-	-	-	-	0.872
1.3) Family of Tactical Trailer Modification-Reserves ⁽²⁾	A		-	-	1.920	-	-	0.650	-	-	0.668	-	-	0.683	-	-	-	-	-	0.683
1.4) Prior Year Cum Funding	A		-	-	46.854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) Family of Tactical Trailers (FTT)			-	-	54.749	-	-	1.668	-	-	2.393	-	-	2.693	-	-	-	-	-	2.693
2) MTRV Trailer																				
2.1) Prior Year Cum Funding	A		-	-	94.907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) MTRV Trailer			-	-	94.907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	149.656	-	-	1.668	-	-	2.393	-	-	2.693	-	-	-	-	-	2.693
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes:																				
⁽¹⁾ FY19 to FY20 increase of \$0.285M will fund additional ECP's, such as those for resolving trailer ground clearance deficiencies for M870. Based on available funding, the M870 ground clearance ECP is projected to be a 5 year procurement. The M870 AAO = 327.																				
⁽²⁾ FY19 to FY20 increase of \$0.015M will fund additional ECP's, such as those for resolving trailer ground clearance deficiencies for the M870.																				

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment															P-1 Line Item Number / Title: 6054 / Env Cntrl Equip Assorted														
ID Code (A=Service Ready, B=Not Service Ready): A										Program Elements for Code B Items: N/A										Other Related Program Elements: 0206624M									
Line Item MDAP/MAIS Code: N/A																													

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	85.983	1.405	0.496	0.495	0.000	0.495	0.496	3.368	3.431	3.500	-	99.174
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	85.983	1.405	0.496	0.495	0.000	0.495	0.496	3.368	3.431	3.500	-	99.174
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	85.983	1.405	0.496	0.495	0.000	0.495	0.496	3.368	3.431	3.500	-	99.174
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Environmental Control Equipment:

The Family of Environmental Control Equipment (ECE) consists of Environmental Control Units (ECU), Field Refrigeration Systems (FRS), and Cooling and Refrigeration Expeditionary Tool Kits (CREK). These systems provide required heating, cooling, storage, and servicing for systems throughout the Marine Corps. Current efforts seek to replace all legacy ECE with systems of higher reliability and higher efficiency using Environmental Protection Agency (EPA) approved refrigerants, which offer more energy efficiency, enhanced mobility, are easier to repair, and quieter than their predecessors. With environmental control systems consuming 50-70% of tactical electric power in theater, these savings will be a significant contribution to reducing the USMC fuel demand, and lightening the Marine Air-Ground Task Force (MAGTF). The Warfighter benefit includes a decreased logistics footprint, less reliance on petroleum-derived fuels, increased local energy security, and reduced tanker losses (fewer on the road). The operational imperative to reduce fuel usage will consequently reduce refueling operations and exposing Marines to hazardous fuel convoy operations.

Efforts include the procurement of the following principal end items and ancillary equipment:

- (1) Additional 60,000 BTU/hr ECUs to sustain Authorized Acquisition Objective (AAO) due to the disposition of ECU variants utilizing R-22 refrigerant, which has been banned by the EPA.
- (2) Small Field Refrigeration Systems (SFRS) replacement. This effort seeks to replace legacy SFRSs to comply with restricting EPA regulations while increasing efficiency, thus reducing overall power requirements/demands.
- (3) Family of ECU replacement. This effort seeks to replace legacy ECUs to comply with restricting EPA regulations while increasing efficiency, thus reducing overall power requirements/demands.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	0.496	0.377	-	0.377	0.385	0.396	0.404	0.412
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.405	-	0.118	-	0.118	0.111	2.972	3.027	3.088
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.405	0.496	0.495	-	0.495	0.496	3.368	3.431	3.500

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment						P-1 Line Item Number / Title: 6054 / Env Cntrl Equip Assorted				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Env Cntrl Equip Assorted				- / 85.983	- / 1.405	- / 0.496	- / 0.495	- / 0.000	- / 0.495
P-40	Total Gross/Weapon System Cost				- / 85.983	- / 1.405	- / 0.496	- / 0.495	- / 0.000	- / 0.495
*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 Appropriation Request: \$1.405M (ACTIVE: \$0.000/RESERVE: \$1.405M)
 Funds have purchased new Refrigeration Units (RUs) for the existing Small and Large Field Refrigeration Systems upgrading the RUs with EPA compliant refrigerant.

FY 2019 Appropriation Request: \$0.496M (ACTIVE: \$0.496/RESERVE: \$0.000M)
 Funds will purchase new Refrigeration Units (RUs) for the existing Small and Large Field Refrigeration Systems upgrading the RUs with EPA compliant refrigerant.

FY 2020 Base Appropriation Request: \$0.495M (ACTIVE: \$0.377/RESERVE: \$0.118M)
 Funds will purchase 60,000 BTU/hr ECUs due to an increase in the Authorized Acquisition Objective (AAO). The AAO increase is a result of the disposition of ECU variants utilizing R-22 refrigerant which is banned by the United States Environmental Protection Agency (EPA). Funding decreased from FY19 to FY20 by \$0.001M which is not a significant change.

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1							P-1 Line Item Number / Title: 6054 / Env Cntrl Equip Assorted						Item Number / Title [DODIC]: 1 / Env Cntrl Equip Assorted								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				85.983			1.405			0.496			0.495			0.000			0.495		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				85.983			1.405			0.496			0.495			0.000			0.495		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				85.983			1.405			0.496			0.495			0.000			0.495		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)			
Flyaway Cost																					
Recurring Cost																					
1.1.1) Small Field Refrigeration Units (SFRS)	-	-	-	-	-	-	-	-	0.246	-	-	-	-	-	-	-	-	-			
1.1.3) Large Field Refrigeration Unit (LFRS)	-	-	-	-	-	-	-	-	0.250	-	-	-	-	-	-	-	-	-			
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	0.496	-	-	-	-	-	-	-	-	-			
Subtotal: Flyaway Cost	-	-	-	-	-	-	-	-	0.496	-	-	-	-	-	-	-	-	-			
Support Cost																					
2.1) Warranties, ILS/CLS Support	-	-	7.673	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2.2) Environmental Control Equipment Assorted Reserves	-	-	8.164	-	-	1.405	-	-	-	-	-	0.118	-	-	-	-	-	0.118			
2.3) Environmental Control Equipment Assorted	-	-	-	-	-	-	-	-	-	-	-	0.377	-	-	-	-	-	0.377			
2.4) Prior Year Cum Funding	-	-	70.146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Subtotal: Support Cost	-	-	85.983	-	-	1.405	-	-	-	-	-	0.495	-	-	-	-	-	0.495			
Gross/Weapon System Cost	-	-	85.983	-	-	1.405	-	-	0.496	-	-	0.495	-	-	0.000	-	-	0.495			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment							P-1 Line Item Number / Title: 6277 / Tactical Fuel Systems					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	334.793	1.788	0.054	0.052	0.000	0.052	0.051	0.051	0.050	0.051	-	336.890
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	334.793	1.788	0.054	0.052	0.000	0.052	0.051	0.051	0.050	0.051	-	336.890
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	334.793	1.788	0.054	0.052	0.000	0.052	0.051	0.051	0.050	0.051	-	336.890
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Family of Expeditionary Fuel Systems (FEFS) is a family of systems line that contains highly versatile fuel systems designed to receive, test, store, transfer and dispense fuel in support of Marine Air Ground Tactical Force (MAGTF) operations. The family contains individual Table of Allowance Material Control Numbers which support MAGTF operations by providing all aspects of land-based fuel support to include analysis, receipt, storage, transfer and dispensing including all the components required to configure the following systems: Tactical Airfield Fuel Distribution System (TAFDS), Amphibious Assault Fuel System (AAFS), SIXCON Fuel Storage and Pump Module, Fire Suppression System (FSS), Helicopter Expedient Refueling System (HERS), Expedient Refueling System (ERS), Ground Refueling System (GERS) (small and medium), 600 Gallons Per Minute (GPM) Fuel Pump Assembly, 150 GPM Fuel Pump Assembly, Hose Reel System - Fuel (HRS-F), Berm Liners, Tanks/Pods (500 Gallon to 50K), Petroleum Quality Analysis System-Enhanced, Expeditionary Mobile Fuel Additive Capability (EMFAC), Petroleum Test Kit and various elastomeric fuel systems components and equipment. Procurement supports centrally managed items with lifecycles, preplanned product improvements, and obsolescence mitigation via newer components and subsystems supported by industry. Procurement also supports repacking current systems into smaller modular packages for scalability and mission tailoring which may require additional subsystems for certain packages to be complete as new TAMCNs and tables of allowances are authorized.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	0.895	-	0.052	-	0.052	0.051	0.051	0.050	0.051		
NR	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	0.893	0.054	-	-	-	-	-	-	-	-	
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-	-	
	Total Obligation Authority	1.788	0.054	0.052	-	0.052	0.051	0.051	0.050	0.051		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment						P-1 Line Item Number / Title: 6277 / Tactical Fuel Systems				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Tactical Fuel Systems				- / 334.793	- / 1.788	- / 0.054	- / 0.052	- / 0.000	- / 0.052
P-40	Total Gross/Weapon System Cost				- / 334.793	- / 1.788	- / 0.054	- / 0.052	- / 0.000	- / 0.052
*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:
 FY2018 Base Appropriation Request: \$1.788M (ACTIVE: \$0.895M/RESERVE: \$0.893M)
 Family of Expeditionary Fuel Systems funds will purchase various centrally managed Fuel Components (Fuel Pods and 3K/20K/50K), Digital Free Water Detectors (DFWD) (replacing legacy Combined Contaminated Fuel Detector (CCFDs)), Solar Pulse Chargers, and a critical 600 Gallons Per Minute (GPM) Engineering Change Proposal (ECP).

FY2019 Base Appropriation Request: \$0.054M (RESERVE: \$0.054M)
 Family of Expeditionary Fuel Systems funds will purchase various centrally managed Fuel Components (Fuel Pods and 3K/20K/50K), Digital Free Water Detectors (DFWD) (replacing legacy CCFDs), Solar Pulse Chargers, and a critical 600 GPM ECP.

FY2020 Base Appropriation Request: \$0.052M (ACTIVE: \$0.052M)
 Family of Expeditionary Fuel Systems funds will purchase various Collapsible Fabric Tanks.

The decrease from FY19 to FY20 of \$0.002M does not result in any significant changes.

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1						P-1 Line Item Number / Title: 6277 / Tactical Fuel Systems							Item Number / Title [DODIC]: 1 / Tactical Fuel Systems								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				334.793			1.788			0.054			0.052			0.000			0.052		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				334.793			1.788			0.054			0.052			0.000			0.052		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				334.793			1.788			0.054			0.052			0.000			0.052		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)			
Flyaway Cost																					
Recurring Cost																					
1.1.1) Fuel System Components and Equipment (ACTIVE)	-	-	0.076	-	-	0.601	-	-	-	-	-	0.052	-	-	-	-	-	0.052			
1.1.2) Fuel System Components and Equipment (RESERVES)	-	-	-	-	-	0.886	-	-	0.054	-	-	-	-	-	-	-	-	-			
Subtotal: Recurring Cost	-	-	0.076	-	-	1.487	-	-	0.054	-	-	0.052	-	-	-	-	-	0.052			
Subtotal: Flyaway Cost	-	-	0.076	-	-	1.487	-	-	0.054	-	-	0.052	-	-	-	-	-	0.052			
Support - Support Cost																					
2.1) Integrated Logistics Support (ACTIVE)	-	-	-	-	-	0.294	-	-	-	-	-	-	-	-	-	-	-	-			
2.2) Integrated Logistics Support (RESERVES))	-	-	1.058	-	-	0.007	-	-	-	-	-	-	-	-	-	-	-	-			
2.3) Prior Years Cumulative Funding	-	-	333.659	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Subtotal: Support - Support Cost	-	-	334.717	-	-	0.301	-	-	-	-	-	-	-	-	-	-	-	-			
Gross/Weapon System Cost	-	-	334.793	-	-	1.788	-	-	0.054	-	-	0.052	-	-	0.000	-	-	0.052			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment	P-1 Line Item Number / Title: 6366 / Power Equipment Assorted

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	390.473	10.280	16.885	22.441	0.000	22.441	24.420	24.920	26.443	26.972	-	542.834
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	390.473	10.280	16.885	22.441	0.000	22.441	24.420	24.920	26.443	26.972	-	542.834
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	390.473	10.280	16.885	22.441	0.000	22.441	24.420	24.920	26.443	26.972	-	542.834
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FAMILY OF POWER EQUIPMENT - The Family of Mobile Electric Power Equipment consists of command and control systems for power management and distribution (intelligent power management), tactical generators ranging from 2 to 100 kilowatts, power distribution systems, energy storage systems, load banks, floodlights, cabling, and electrician tool kits. This equipment is procured and fielded to manage and provide electricity on the battlefield. Systems may be mounted on prime movers, skids or trailers. Systems support maneuver, combat support, and combat service support units requiring tactical power to operate weapons systems, Command, Control, Communications, Computers and Intelligence (C4I) systems, medical and messing facilities, environmental control equipment, and water purification systems. With over 10,000 generators and using diesel engines in the Operating Forces, improving their fuel efficiency and reliability will be a significant contribution to reducing the USMC fuel demand, and lightening the Marine Air-Ground Task Force (MAGTF). The Warfighter benefit includes a decreased logistics footprint, less reliance on petroleum derived fuels, increased local energy security, and reduced tanker losses (fewer on the road). The operational imperative to reduce fuel usage will consequently reduce refueling operations and exposing Marines to hazardous fuel convoy operations.

Efforts encompass procurement and testing of the following principal end items and ancillary equipment:

- (1) Intelligent Power Management Systems (IPMS) provide a robust, modular, and scalable solution to interconnect, control, store and distribute power from various sources. As a result, the power requirements will be met in a more efficient manner by matching power production to load demand, reducing spinning reserve, extending maintenance cycle times, and reducing fuel consumption. The IPMS will consist of a micro-gridding capability which will consist of the Advance Digital Control System, which is a product improvement for the Advance Medium Mobile Power Source generators, an Intelligent Power Distribution (IPD) system, an Energy Storage Unit (ESU), a Metering and Monitoring capability, and it will eventually integrate renewables.
- (2) Advanced Medium Mobile Power Source (AMMPS): procurement of the remaining Generator Sets needed to complete the Approved Acquisition Objective.
- (3) Advanced AMMPS Digital Control System (ADCS): procurement to provide tactical micro-gridding capability that will provide greater flexibility and reduce fuel consumption of networked generators.

FAMILY OF ADVANCED POWER SOURCES FOR COMMUNICATIONS EQUIPMENT (APSCE) - This family consists of multiple suites of devices, grouped into sub-families, that are used to provide highly expeditionary power (worn on the Marine, hand-carried, or vehicle mounted) to operate and power communications equipment, computers and peripheral equipment in place of disposable batteries, and for scenarios where fuel powered generators are too large, too heavy, unsuitable for use, or provide undue logistics burden due to refueling needs

The first suite of devices encompasses renewable and hybrid energy based systems, and includes the man-portable Ground Renewable Expeditionary Energy Network System (GREENS) that supports a company level operations center and Forward Operating Base, the man-packable Solar Portable Alternative Communications Energy Systems (SPACES) that supports Combat Outposts and Observation Points, and the Mobile Electric Hybrid Power Source (MEHPS) that provides light systems (up to 5kW) and medium (up to 10kW) to power mission command and control, information networks, communications,

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment						P-1 Line Item Number / Title: 6366 / Power Equipment Assorted				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
environmental control, life support, sustainment and illumination at the battalion level. All of these exploit the use of solar energy and power management technologies to recharge batteries and directly power electronic equipment without a need, or with a reduced need for re-fueling generators. The second suite of devices includes both shelter based (semi-rugged) and fully ruggedized (operate outdoors) power supplies that convert alternating current (AC) to direct current (DC) and vice versa. These power supplies support all elements across the USMC with standard models that provide variable electrical output to support a wide electrical range of operations. The third suite of devices is the vehicle mounted inverters that convert vehicle 24 Volt direct current to 120 Volt alternating current to allow on-the-move operation of equipment that previously was only able to be used while stationary. These inverters are used throughout all theaters of operations by Marine Corps aviation and ground units requiring 120 VAC, 60Hz electrical power. The inverter based power systems reduce the requirement for tactical generators needed for small operations. The fourth suite of devices provides an alternative power source for each radio in the Marine Corps (seven different models). These radio power adapters allow radios to be powered from central power sources (such as GREENS and SPACES) or grid power (120 volt AC generator), reducing the consumption of rechargeable and non-rechargeable batteries when in garrison/shelter operations. These systems lead to cost avoidance, conservation of batteries, and flexibility of operations. The fifth suite supports all lead-acid batteries used in vehicles and artillery systems, and a host of battery chemistries (nickel-cadmium (NiCd), nickel metal hydride (NiMH), and lithium-ion (Li-ion)) used in command, control and communications systems. The suite consists of battery chargers, battery conditioners, battery maintainers, battery analyzers, and battery safety management systems for both garrison (semi-rugged) and deployed operations (ruggedized). As the USMC (and all services) move towards fully adopting rechargeable batteries for energy efficiency and logistics demand reduction, this suite of devices is critical to support numerous weapons, robots, and IED jammers.										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	8.492	16.885	20.573	-	20.573	22.512	22.973	24.455	24.944
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.788	-	1.868	-	1.868	1.908	1.947	1.988	2.028
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	10.280	16.885	22.441	-	22.441	24.420	24.920	26.443	26.972

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment					P-1 Line Item Number / Title: 6366 / Power Equipment Assorted					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Power Equipment Assorted				- / 390.473	- / 10.280	- / 16.885	- / 22.441	- / 0.000	- / 22.441
P-40	Total Gross/Weapon System Cost				- / 390.473	- / 10.280	- / 16.885	- / 22.441	- / 0.000	- / 22.441
*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:

FY2018 Base Appropriation Request: \$10.280M (ACTIVE: \$8.492M/RESERVE: \$1.788M)

MOBILE POWER EQUIPMENT \$5.614M (ACTIVE: \$5.614M/RESERVE: \$0.000M)

Funds the procurement of Intelligent Power Management (IPM) subsystems: AMMPS ADCS, AMMPS generators, FDT charges and various logistics support. Legacy equipment is fueled by fossil fuels. Intelligent Power Management System (IPMS) and micro-gridding serve to decrease the size of diesel-fueled generators required by networking equipment. The "brains" of the system, the controller (Advanced Digital Control System), tells the system when to run off the generator, and when to run off energy storage systems (batteries). The phases of this IPMS system will first acquire Intelligent Power Distribution (IPD), and in a later phase, Energy Storage Units (batteries) that will reduce the need for LAMPS, reduce reliance on fossil fuel, and reduce the volume and frequency of resupply missions required to provide consumable items for corrective or preventive maintenance activities, reducing logistics footprint and lightening the load. Increase during FY18 is due to AMMPS receiving a Table of Equipment Change Request (TOECR) to procure more systems to support the Operational Force's needs.

ADVANCED POWER SOURCES \$4.666M (ACTIVE:\$2.878M/RESERVE: \$1.788M)

Funds the procurement and fielding of Advanced Battery Charger. Funding required to meet the Approved Acquisition Objectives outlined in the Total Force Structure Management System. Advanced Power Sources favorably impact the Warfighter by funding renewable and hybrid power solutions. Collectively, these help to reduce reliance on fossil fuels, expand mission reach by extending both the mission and overall serviceable life of equipment. Additionally, they reduce the volume and frequency of resupply missions required to provide consumable items for corrective or preventive maintenance activities, reducing logistics footprint and lightening the load. Currently, hybrid/renewable systems do not scale as well as diesel-fueled systems. Continued development is required to increase this capability over time.

FY2019 Base Appropriation Request: \$16.885M (ACTIVE: \$16.885M/RESERVE: \$0.000M)

MOBILE POWER EQUIPMENT \$9.447M (ACTIVE: \$9.447M/RESERVE: \$0.000M)

Funds the procurement of IPM subsystems AMMPS ADCS, AMMPS generators, FDT charges and various logistics support. Legacy equipment is fueled by fossil fuels. Intelligent Power Management System and micro-gridding serve to decrease the size of diesel-fueled generators required by networking equipment. The "brains" of the system, the controller (Advanced Digital Control System), tells the system when to run off the generator, and when to run off energy storage systems (batteries). The phases of this IPMS system will first acquire IPD, and in a later phase, Energy Storage Units (batteries) that will reduce the need for LAMPS, reduce reliance on fossil fuel, and reduce the volume and frequency of resupply missions required to provide consumable items for corrective or preventive maintenance activities, reducing logistics footprint and lightening the load. Increase in FY19 is due to procuring additional AMMPS and MADCS to support the IPM System. The Approved Acquisition Objective (AAO) for Micro-grid Advanced Digital Control System (MADCS), formerly titled AMMPS DCS Kits in PB-19, increased from 179 to 328 units. This increase is largely being supported by the budget originally identified for Large Advanced Mobile Power System (LAMPS) Program which cancelled in FY18, and IPMS Energy Storage Unit (ESU), formerly titled Micro-grid Storage/IPM in PB-19, which experienced programmatic adjustments also in FY18.

ADVANCED POWER SOURCES \$7.438M (ACTIVE:\$7.438M/RESERVE: \$0.000M)

Continues to fund the procurement and fielding of Advanced Battery Charger as well as the systems needed for product verification testing of MEHPS' solar panels and system integration, then awarding the solar panel production contract and associated Integrated Logistics Support. Will also procure the systems needed for product verification testing for the next generation SPACES.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment		P-1 Line Item Number / Title: 6366 / Power Equipment Assorted
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		
FY2020 Base Appropriation Request: \$22.441M (ACTIVE: \$20.573/RESERVE: \$1.868M) MOBILE POWER EQUIPMENT \$12.058M (ACTIVE: \$12.058M/RESERVE: \$0.000M) Funds the procurement of (AMMPS, Advanced Digital Control System (ADCS), Advance Medium Mobile Power System (AMMPS) generators, FDT charges and various logistics support. Funding increased from FY19 to FY20 by \$2.611M due to production of Intelligent Power Distribution (IPD) Panels which is a subsystem of the IPMS. ADVANCED POWER SOURCES \$10.383M (ACTIVE:\$8.515M/RESERVE: \$1.868M) Continues to fund the procurement and fielding of Advanced Battery Charger as well as awarding the MEHPS production contract. The increase in Advanced Power Sources funding of \$2.945M from FY19 to FY20 is due to increase in procurement and fielding of MEHPS. OCO: FY 2020 Overseas Contingency Operations (OCO) Request: N/A		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1						P-1 Line Item Number / Title: 6366 / Power Equipment Assorted						Item Number / Title [DODIC]: 1 / Power Equipment Assorted						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				390.473		10.280		16.885		22.441		0.000		22.441				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				390.473		10.280		16.885		22.441		0.000		22.441				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				390.473		10.280		16.885		22.441		0.000		22.441				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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 - Mobile Power Equipment Cost																		
Recurring Cost																		
1.1.1) Advanced Medium Mobile Power Systems (AMMPS) ⁽¹⁾	-	-	168.763	-	-	2.988	-	-	3.007	-	-	-	-	-	-	-	-	-
1.1.2) Micro-grid ADCS (MADCS) ⁽²⁾	-	-	1.234	-	-	1.615	-	-	6.440	-	-	-	-	-	-	-	-	-
1.1.3) IPMS Intelligent Power Distribution (IPD)	-	-	-	-	-	-	-	-	-	-	-	12.058	-	-	-	-	-	12.058
1.1.5) Large Advanced Mobile Power Systems (LAMPS)	-	-	2.170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.1.6) MEPDIS-R Panels	-	-	-	-	-	0.482	-	-	-	-	-	-	-	-	-	-	-	-
1.1.7) Power Equipment Logistics Support Items	-	-	4.486	-	-	0.529	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	176.653	-	-	5.614	-	-	9.447	-	-	12.058	-	-	-	-	-	12.058
Subtotal: Hardware - Mobile Power Equipment Cost	-	-	176.653	-	-	5.614	-	-	9.447	-	-	12.058	-	-	-	-	-	12.058
Hardware - Advanced Power Sources Cost																		
Recurring Cost																		
2.1.1) Alternate Power Sources for Communications/	-	-	112.504	-	-	2.878	-	-	7.438	-	-	8.515	-	-	-	-	-	8.515

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Exhibit P-5, Cost Analysis: PB 2020 Navy														Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1							P-1 Line Item Number / Title: 6366 / Power Equipment Assorted							Item Number / Title [DODIC]: 1 / Power Equipment Assorted				
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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
Electronic Equipment (APSCE)																		
2.1.2) Alternate Power Sources for Comm/Electric Equip (APSCE)-Reserves	-	-	9.486	-	-	1.788	-	-	-	-	-	1.868	-	-	-	-	-	1.868
<i>Subtotal: Recurring Cost</i>	-	-	121.990	-	-	4.666	-	-	7.438	-	-	10.383	-	-	-	-	-	10.383
<i>Subtotal: Hardware - Advanced Power Sources Cost</i>	-	-	121.990	-	-	4.666	-	-	7.438	-	-	10.383	-	-	-	-	-	10.383
Support Cost																		
3.1) Prior Year Cumulative Funding	-	-	91.830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support Cost</i>	-	-	91.830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	390.473	-	-	10.280	-	-	16.885	-	-	22.441	-	-	0.000	-	-	22.441
Remarks: [Hardware] Mobile Power Equipment is a portion of Expeditionary Energy Initiatives. With IPMS becoming a program of record, there is no reason to procure any more LAMPS as originally planned. IPMS & micro-gridding allows multiple generators of smaller sizes to work together and eliminate the need for additional larger generators, reducing fuel consumption and reducing the logistics footprint. IPMS is a program with phases with the Intelligent Power Distribution (IPD) Panels to be developed and fielded ahead of the energy storage units. Thus, the energy storage unit funding has been pushed to the right. Note that the AAOs for generators and associated power equipment have been changed external to MCSC a number of times over the past year. The current plan provides the best support for what is currently known. If requirements are changed again, a new plan will be developed to support. [Hardware] Advanced Power Sources is a portion of Expeditionary Energy Initiatives.																		
Footnotes: (1) Increase in FY18 is due to AMMPS receiving a Table of Equipment Change Request (TOECR) to procure more systems to support the Operational Force's needs. In FY19, additional systems are being procured to support the IPMS program. AMMPS is also on step ladder pricing. (2) Decrease for FY18 is due to the need to fulfill the TOECR requirement to procure more AMMPS. Therefore, MADCS increased in FY19 to compensate for those we did not procure as originally planned.																		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment	P-1 Line Item Number / Title: 6518 / Amphibious Support Equipment

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	183.648	6.230	14.890	7.101	0.000	7.101	7.181	32.858	52.717	45.640	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	183.648	6.230	14.890	7.101	0.000	7.101	7.181	32.858	52.717	45.640	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	183.648	6.230	14.890	7.101	0.000	7.101	7.181	32.858	52.717	45.640	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Reconnaissance Support Equipment supports multiple capabilities, enhancements, life cycle replacements, and personnel equipment shortfalls when required and as needed by reconnaissance units throughout operating forces for airborne/parachuting programs, specialized reconnaissance programs and underwater reconnaissance capability programs. Programs such as: Airborne Reconnaissance Equipment (ARE) program -- a roll-up line with multiple specialized raid projects, such as, parachuting equipment used for reconnaissance in support of Marine Air Ground Task Force (MAGTF) operations; Aerial Delivery and Autonomous Distribution (A2D2) Family of Systems (formerly Joint Precision Air Drop System (JPADS)) program -- provides capability for increased air carrier survivability, ground accuracy, standoff delivery, and improved effectiveness and assessment feedback for airdrop missions with procurement of parachute delivery systems consisting of a decelerator (parachute) guided by an Autonomous Guidance Unit attached to a Container Delivery System that interfaces with cargo aircraft for autonomous delivery of airborne cargo from high altitudes and lateral separation to predetermined small drop zones; Amphibious Reconnaissance Capability program (formerly Underwater Reconnaissance Capability (URC))-- an overarching Family of Systems which sustains/enhances/supports capabilities of current and future combatant diving systems and small craft as needed and when required by the fleet such as Combat Rubber Reconnaissance Craft (CRRC), Enhanced Combat Rubber Reconnaissance Craft (ECRRC), Open Water Safety Craft (OWSC), Underwater Breathing Apparatus (UBA), Combatant Diver Full Face Mask (CDFFM), Combatant Diver Vest (CDV), Expeditionary Hyperbaric Chamber System (EHCS), Transportable recompression Chamber System (TRCS), Combat Dry Diver Suit (CDDS), Maritime Operations Suit (MOS), Portable Compressor Diesel Driven (PCDD), Rapid Deployable Oxygen Transfer Pump System (RDOTPS), Non-gasoline Burning Outboard Engine (NBOE), and the Diver Reconnaissance Vehicle (DRV), Diver Propulsion Device (DPD), Marine Individual Assault Kit (MIAK), Marine Assault Breacher's Kit (MABK)in support of MAGTF expeditionary operations. SEA Mob program is an autonomous 11 meter boat, which has the capability for Unmanned Aerial Vehicle (UAV), Unmanned Undersea Vehicle (UUV) and Unmanned Surface Vehicle (USV). Aerial Delivery and Autonomous Distribution (A2D2) is a level of effort program that will provide increased capability and survivability for airborne cargo.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.956	14.691	6.897	-	6.897	6.973	32.646	52.501	45.420
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.274	0.199	0.204	-	0.204	0.208	0.212	0.216	0.220
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	6.230	14.890	7.101	-	7.101	7.181	32.858	52.717	45.640

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment						P-1 Line Item Number / Title: 6518 / Amphibious Support Equipment				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Amphibious Support Equipment				- / 183.648	- / 6.230	- / 14.890	- / 7.101	- / -	- / 7.101
P-40	Total Gross/Weapon System Cost				- / 183.648	- / 6.230	- / 14.890	- / 7.101	- / 0.000	- / 7.101
*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: FY2018 Base Appropriations Request: \$6.230M Airborne Reconnaissance Equipment: \$4.538M (Active - \$4.264M, Reserves - \$0.274M) - Funding will support procurement of the Enhanced Multi Mission Parachute Systems (EMMPS), and various equipment such as MA-12 Altimeters, kits, component sets, ancillary equipment and increased combat multipliers, survivability, durability and functionality over that of the current inventory items. Amphibious Reconnaissance Capability: \$1.692M (Active - \$1.692M, Reserves - \$0.000M) - Funding will support procurement of Amphibious Reconnaissance Capability Family of Systems equipment such as the Combat Rubber Reconnaissance Craft and Rapid Deployable Oxygen Transfer Pump System to sustain, enhance, and support capabilities of current and future combatant diving systems and small craft. FY2019 Base Appropriations Request: \$14.890M Airborne Reconnaissance Equipment: \$2.612M (Active - \$2.413, Reserves - \$0.199M) - Funding will continue to support the procurement of the Enhanced Multi Mission Parachute Systems (E-MMPS). Amphibious Reconnaissance Capability: \$12.278M (Active - \$12.278M, Reserves - \$0.000M) - Funding will continue to support procurement of Combat Rubber Reconnaissance Craft and procurement of Amphibious Reconnaissance Capability Family of Systems equipment such as, the Marine Assault Breacher's Kit and the Marine Individual Assault Kit for diving configuration and to sustain, enhance, and support capabilities of current and future combatant diving systems and small craft. Congressional Plus-Up funding of \$9.6M supports Enhanced Diver Propulsion Device. FY2020 Base Appropriations Request: \$7.101M Airborne Reconnaissance Equipment: \$2.921M (Active - \$2.717M, Reserves - \$0.204M) - Funding will be utilized to support the procurement of the Enhanced Multi Mission Parachute Systems (E-MMPS). Aerial and Autonomous Distribution: \$1.479M (Active - \$1.479, Reserves - \$0.000M) - Funding will provide for the initial procurement of the Aerial Delivery and Autonomous Distribution (A2D2) Family of Systems. Amphibious Reconnaissance Capability: \$2.701M (Active - \$2.701M, Reserves - \$0.000M) - Funding will continue to support procurement of Combat Rubber Reconnaissance Craft and procurement of Amphibious Reconnaissance Capability Family of Systems equipment such as, the Marine Assault Breacher's Kit and the Marine Individual Assault Kit for diving configuration and to sustain, enhance, and support capabilities of current and future combatant diving systems and small craft. The decrease in funding from FY19 to FY20 of \$7.789M is due to the Congressional Plus-up in FY19 for the one time procurement of Enhanced-Diver Propulsion Device (E-DPD).										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1							P-1 Line Item Number / Title: 6518 / Amphibious Support Equipment								Aggregated Items Title: Amphibious Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Airborne and Recon Equipement (ARE)																				
1.1) Enhanced Multi-Mission Parachute System (EMMPS)	A		-	-	48.882	22,064.00	157	3.464	22,500.00	107	2.408	22,900.00	118	2.702	-	-	-	22,900.00	118	2.702
1.2) EMMPS (PS2) Support	A		-	-	-	-	-	-	-	-	0.005	-	-	0.015	-	-	-	-	-	0.015
1.3) EMMPS (Reserves)	A		-	-	0.720	22,064.00	12	0.265	22,500.00	8	0.180	22,900.00	8	0.183	-	-	-	22,900.00	8	0.183
1.4) EMMPS (Reserves) Support	A		-	-	-	-	-	0.009	-	-	0.019	-	-	0.021	-	-	-	-	-	0.021
1.5) MA-12 Altimeters	A		-	-	-	-	-	0.400	-	-	-	-	-	-	-	-	-	-	-	-
1.6) TORDS	A		-	-	-	-	-	0.400	-	-	-	-	-	-	-	-	-	-	-	-
1.7) Aerial Delivery and Autonomous Distribution	A		-	-	-	-	-	-	-	-	-	-	-	1.479	-	-	-	-	-	1.479
Subtotal: 1) Airborne and Recon Equipement (ARE)			-	-	49.602	-	-	4.538	-	-	2.612	-	-	4.400	-	-	-	-	-	4.400
2) Amphibious Reconnaissance Capability - formerly Underwater Reconnaissance Capability (URC)																				
2.1) Combat Rubberized Reconnaissance Craft (1)	A		-	-	35.035	-	-	1.586	-	-	1.678	-	-	1.701	-	-	-	-	-	1.701
2.2) Enhanced - Diver Propulsion Device	A		-	-	-	-	-	-	-	-	9.600	-	-	-	-	-	-	-	-	-
2.3) Rapid Deployable Oxygen Transfer Pump System	A		-	-	-	-	-	0.106	-	-	-	-	-	-	-	-	-	-	-	-
2.4) Marine Assault Breacher's Kit	A		-	-	-	-	-	-	-	-	0.500	-	-	0.500	-	-	-	-	-	0.500
2.5) Marine Individual Assault Kit	A		-	-	-	-	-	-	-	-	0.500	-	-	0.500	-	-	-	-	-	0.500
Subtotal: 2) Amphibious Reconnaissance Capability - formerly Underwater Reconnaissance Capability (URC)			-	-	35.035	-	-	1.692	-	-	12.278	-	-	2.701	-	-	-	-	-	2.701
3) Prior Years Cumulative Funding																				
3.1) Prior Years Cumulative Funding	A		-	-	99.011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Prior Years Cumulative Funding			-	-	99.011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	183.648	-	-	6.230	-	-	14.890	-	-	7.101	-	-	-	-	-	7.101
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: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1	P-1 Line Item Number / Title: 6518 / Amphibious Support Equipment	Aggregated Items Title: Amphibious Support Equipment

(1) Overarching family of systems line includes various quantities of multiple dive and boat systems, components, and ancillary equipment as needed to sustain/enhance amphibious capability. Funding is used to support legacy items with known and unknown modifications identified during the year of execution.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment						P-1 Line Item Number / Title: 6520 / EOD Systems						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0206211M, 0206313M, 0206623M, 0206315M, 0502511M, 0206624M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	6,575.470	47.447	55.854	44.700	3.670	48.370	24.593	30.161	56.218	102.132	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	6,575.470	47.447	55.854	44.700	3.670	48.370	24.593	30.161	56.218	102.132	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	6,575.470	47.447	55.854	44.700	3.670	48.370	24.593	30.161	56.218	102.132	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:												
ASSAULT BREACHER VEHICLE (ABV) is a tracked, armored combat engineer vehicle designed to breach minefields and complex obstacles and provide a deliberate and in-stride breaching capability. ABV consists of a rebuilt and upgraded M1A1 Tank chassis with the integration of Non-Developmental Items (NDI), which includes a Full-Width Mine Plow, a Dozer Blade, a Surface Mine Plow, a Rapid Ordnance Removal System, two M58 Linear Demolition Charges, a lane marking system and a self-defense weapon system. The ABV will provide crew protection and vehicle survivability while having the speed and mobility to keep pace with the maneuver force. The M1A1 Tank Chassis will provide economic supportability of the system through its commonality with the tank fleet and armor protection for survivability. MK 154 MODERNIZATION is a line charge launcher system installed in the Amphibious Assault Vehicle Personnel variant (AAVP7) used to breach mine fields in shallow water and inland areas, providing the USMC with an amphibious operations breaching capability. FAMILY OF EOD EQUIPMENT (FEOD) is comprised of over forty Table of Authorized Material Control Numbers (TAMCNs) providing the required tools and capabilities to detect, locate, access, identify, triage, diagnose, stabilize, render safe, neutralize, recover, exploit, and dispose of unexploded explosive ordnance (UXO), improvised explosive devices (IED), and weapons of mass destruction (WMD). The portfolio includes specialized diagnostic equipment, robotics and energetically actuated tools, which enable EOD to provide the Marine air-ground task force (MAGTF) and Marine Special Operations Forces with critical enabling capabilities that deliver responsive, scalable, strategic depth for special operations, crisis response, and littoral access. MINE RESISTANT AMBUSH PROTECTED (MRAP) Family of Vehicles (FoV) provides Warfighters multi-mission platforms capable of mitigating Improvised Explosive Devices (IEDs), underbody mines, and small arms fire threats, which are currently the greatest casualty producers in Overseas Contingency Operations (OCO). Multiple MRAP vehicle categories (CATs) have been procured, fielded, and sustained: MRAP-Air Terrain Vehicle (M-ATV) - Combat operations (ops) in rural, mountainous, urban terrain. Category I - Urban combat operations, ambulance. Category II - Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III - Mine/IED clearance ops, explosive ordnance disposal. Funding includes required Government Furnished Equipment (GFE)/subsystems and Engineering Change Proposal (ECP)/Capability Insertion in response to an UUNS and Warfighter safety and survivability requirements. MRAP funding has been realigned to BLI 5050 beginning in FY19. MARINE ELECTRONIC WARFARE GROUND FAMILY OF SYSTEMS (MEGFoS) provides interconnected electronic warfare systems for use at fixed sites, on tactical vehicles, and dismounted that will operate across a range of frequencies in order to provide the Marine Corps that ability to maneuver efficiently inside the electromagnetic spectrum. MEGFOS provides the ability to protect friendly use of spectrum, sense												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment		P-1 Line Item Number / Title: 6520 / EOD Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206211M, 0206313M, 0206623M, 0206315M, 0502511M, 0206624M
Line Item MDAP/MAIS Code: N/A		
all spectrum usage in an area of responsibility, and to target adversaries inside spectrum with the intent to deny, delay or degrade an adversary's decision making cycle. MEGFOS also includes the ability to use spectrum for force protection to counter Radio Controlled Improvised Explosive Devices (RCIED) and Unmanned Aerial Systems. MEGFOS is the follow on capability to MFEW and will begin developmental efforts in FY20 with production efforts beginning FY23. FAMILY OF COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) CAPABILITIES (F2C) provides capabilities not found in the current Joint land force structure to defeat explosive hazards and protect Marines and equipment while conducting route and area clearance operations. The Family of Counter-Improvised Explosive Device (C-IED) Capabilities (F2C) will enable Commanders to deliberately operate in explosive hazards environments by detecting and marking explosive hazards, enabling the Commanders to make timely and informed decisions to avoid the explosive hazards, or, if necessary, neutralize explosive hazards that impede their missions. Multiple detection and marking capabilities will detect a broader spectrum of explosive hazards and achieve higher overall effectiveness rates. Standoff and remote-controlled detection and marking capabilities will remove Joint forces from direct contact with explosive hazards and enhance force protection and the vehicles' system survivability. Operational speeds and rates will increase and better support the operational tempo (OPTEMPO) of the current and future force. ENFIRE is a digital surveying kit designed to collect and disseminate engineer-related information while minimizing exposure to enemy observation.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment					P-1 Line Item Number / Title: 6520 / EOD Systems					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206211M, 0206313M, 0206623M, 0206315M, 0502511M, 0206624M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	EOD Systems				- / 6,575.470	- / 47.447	- / 55.854	- / 44.700	- / 3.670	- / 48.370
P-40	Total Gross/Weapon System Cost				- / 6,575.470	- / 47.447	- / 55.854	- / 44.700	- / 3.670	- / 48.370
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Base Appropriation Request: \$26.670M										
MINE RESISTANT AMBUSH PROTECTED (MRAP) VEHICLES: (\$1.389M) Funded Engineering Change Proposal (ECP) upgrades for the enduring MRAP vehicle requirement. Funded both the Blue Force Tracker and JBC-P A-kit development and procurement to maintain vehicle relevancy in meeting force protection threats and responding to operational needs. Beginning in FY19, MRAP funding has been realigned from BLI 6520 to BLI 5050. Realignment of efforts to new BLI in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.										
FAMILY OF EOD EQUIPMENT: (\$25.281M) Funded Supply Stock Lists (SL-3) Kits. SL-3 are the tools, parts and specialized tools that come with the primary system. The procurement supported the following items: Demolition Firing Device Kits (DFDK). DFDK is comprised of COTS items that provided EOD technicians with the capability to conduct explosive operations and render safe procedures with Demolition Remote and Time devices. Expeditionary Radiographic Kits (ERK) is a Radiographic X-Ray machine that allows EOD technicians to determine the condition of a device / munition's without having to first gain physical access. Grid Aim Kits, a grid overlay capability that ensures a high level of accuracy when targeting individual components inside an IED/WMD. AN/PDX-2 calibration needed to conduct the calibrations of the Radica Set in order to maintain the equipment's ability to accurately measure radiation. Small Unmanned Ground Vehicles-310 robots and Small Unmanned Ground Vehicles-110 robots that allow EOD Marines to investigate and conduct render safe procedures at a stand of distance.										
FY 2019 Base Appropriation Request: \$47.854M										
FAMILY OF EOD EQUIPMENT: (\$45.962M) Funding supports various tool kits and the following items: Medium robots, robots that allow EOD Marines to investigate and conduct render safe procedures at a stand of distance. Video Inspection Capability (VIC) that consist of a video fiberscope that enables the inspection of contents and circuitry of an IED in a small package with real time imagery. Kukri-Saber a diagnostic system designed to analyze an electrical detonator or switch within an IED firing circuitry and monitors the electrical current in a single wire conductor designed to electronically isolate that conductor should the electronic current rise above a preset threshold. Mini-Mira, a system that detects active microwave, ultrasonic, and infrared signatures emitting from an IED or WMD device. Expeditionary Radiographic Imaging Systems, a Radiographic X-Ray machine that allows EOD technicians to determine the condition of a device/munition without having to first gain physical access. Remote Fuze Disassembly kits, an EOD system that allows the EOD Marine to inert live ammunitions. Bomb Suit Tool kit which include Chemical, Biological, Nuclear, Radiological and Explosive (CBNRE) kits. Search kits which provides EOD Marines with specialized tools and equipment to perform interior and exterior search operation involving IED. Tec kits, SL-3 kits, X-Ray GO kits and IED Kits which provide the EOD Marine with the necessary tools and equipment to support render safe procedures and operations involving IED and WMDs. Table of Equipment Plus Up which supports the growth of two USMC platoons, Sensor Detectors, and Improvised Explosive Device (IED)/Weapons of Mass Destruction (WMD) diagnostic kits. Advanced Manufacturing (AVM): AVM allows for manufacturing of hard to procure pieces and parts. It allows specialized tool fabrication, flattens the supply chain, and shortens the wait time for EOD to diagnose and render safe improvised explosive devices. Capabilities consists of AVM machines, associated hardware, software, training, technical manual development, 3 dimensional scanning, controllers, internal networks, and communication assets. The IED WMD is a capability that will allow the EOD Marine to have the ability to detect radiation, conduct field confirmatory chemical analysis, conduct Thru-Barrier Chemical detection, handheld colorimetric chemical detection, biological sampling, the ability to communicate and report back findings, conduct personal decontamination and have the ability to protect the EOD Marine from hazardous effects of those materials.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 1: Engineer and Other Equipment		P-1 Line Item Number / Title: 6520 / EOD Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206211M, 0206313M, 0206623M, 0206315M, 0502511M, 0206624M
Line Item MDAP/MAIS Code: N/A		
FAMILY OF COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) CAPABILITIES (F2C): (\$1.891M) Funding supports procurement of Counter Improvised Explosive Device (C-IED) Capability (F2C) equipment. This procurement provides critical equipment such as Sickie Sticks; a long pole used to positively identify in placed explosive hazard and other F2C tools to detect and mark explosive hazards; provide standoff and remote-controlled detection and marking and remove operating forces from direct contact with explosive hazards. ASSAULT BREACHER VEHICLE MODIFICATION: (\$0.001M) Funding supports ABV Lift Motor modernization efforts. FY 2020 Base Appropriation Request: \$44.700M FAMILY OF EOD EQUIPMENT: (\$43.360M) Funding will be used to procure the following: Supply Stock Lists (SL-3), equipment to include Counter-Weapons of Mass Destruction kits. Mini-Mira, a system that detects active microwave, ultrasonic, and infrared signatures emitting from an IED or WMD device. Medium robots, robots that allow EOD Marines to investigate and conduct render safe procedures at a stand of distance. Remote Fuze Disassembly kits, an EOD system that allows the EOD Marine to inert live ammunitions. These modifications will allow the service life extension of the system. AN/PVS-31 Optic Sight sustainment will allow the Marine Corps the ability to maintain and fix broken systems. Decrease of \$2.602M from FY19 to FY20 is due to completion of Medium robot procurement. ASSAULT BREACHER VEHICLE MODIFICATION: (\$1.340M) Funding will continue to support ABV Lift Motor modernization efforts and initiate upgrades to mine plows allowing ABV sea to land loading and unloading, Field Service Representative (FSR) support, update Tech Manuals (TM) , and Information Assurance (IA) support. Increase of \$1.339M from FY19 to FY20 reflects realignment from Engineer Modification Kits (EMK) BLI 6670 supporting upgrades to mine plows, FSR support, TM updates and IA support. OCO: FY 2018 Overseas Contingency Operations (OCO) Request: \$20.777M (\$4.000M MRAP, \$16.777M EOD) MINE RESISTANT AMBUSH PROTECTED (MRAP) Family of Vehicles (FoV): \$4.000M Funded the installation of Egress kits procured in response to MARCENT enduring requirements. The Egress kit increased force protection on all Cougar CAT I and CAT II variants by ensuring that vehicle occupants can safely exit the vehicle after blast, rollover or water submersion events. FAMILY OF EOD EQUIPMENT: (\$16.777M) - Procures Commercial Off the Shelf (COTS) equipment to include sensor detectors, video fiber optic scopes, Improvised Explosive Devices (IED)/Weapons of Mass Destruction (WMD) diagnostic kits and fusion optics. These capabilities will give the EOD technician precision capabilities to counter IEDs/WMDs during category "A" incidents where the EOD technician is required to assume a grave and immediate risk and physically operate within the very serious injury zone. Continue to provide support to EOD operations currently in support of U.S. Forces Central Command (CENT) and other "NEW NORM" (ONN) Special Purpose Marine Air Ground Task Forces (SPMAGTFs) Crisis Response (CR) postured world-wide require a multitude of EOD specific equipment items to achieve full readiness, enabling supported units and nations engaged against the threat and use of IEDs, WMDs, and Unexploded Explosive Ordnance (UXO). FY 2019 Overseas Contingency Operations (OCO) Request: \$8.000M FAMILY OF COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) CAPABILITIES (F2C): (\$8.000M) Procures Husky Mounted Detection System Wire Detection (HMDS-WD) systems in support of R2C FoS Increment II Capabilities. This capability will yield faster, more effective route clearance missions, significantly improve chances of avoiding an explosive hazard strike, and better awareness of the enemy's tactics, techniques, and procedures. The current HMDS lacks the ability to find command wires associated with deeply buried IEDs, relying on the ground penetrating radar to find the IED main charge or container. FY 2020 Overseas Contingency Operations (OCO) Request: \$3.670M. FAMILY OF COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) CAPABILITIES (F2C): (\$3.670M) Procures hand-held buried wire detection devices while dismounted, to include sweeping suspected IED locations during dismounted operations. The outer portions of the hand-held buried wire detection device employs this capability as part of their mission to locate command wire.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1						P-1 Line Item Number / Title: 6520 / EOD Systems									Aggregated Items Title: EOD Systems					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Assault Breacher Vehicle (ABV)																				
1.1) Assault Breacher Vehicle (ABV) Modification ⁽¹⁾	A		-	-	7.092	-	-	-	-	-	0.001	-	-	1.340	-	-	-	-	-	1.340
Subtotal: 1) Assault Breacher Vehicle (ABV)			-	-	7.092	-	-	-	-	-	0.001	-	-	1.340	-	-	-	-	-	1.340
2) Family of EOD Systems																				
2.1) EOD Specialized Equipment and Tool Kits ⁽²⁾	A		-	-	154.897	-	-	42.058	-	-	45.962	-	-	43.360	-	-	-	-	-	43.360
Subtotal: 2) Family of EOD Systems			-	-	154.897	-	-	42.058	-	-	45.962	-	-	43.360	-	-	-	-	-	43.360
3) MK 154 Remanufacture																				
3.1) MK 154 Remanufacture	A		199,083.33	48	9.556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) MK 154 Remanufacture			-	-	9.556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) Mine Resistant Ambush Protected (MRAP)																				
4.1) Upgrades	A		-	-	0.854	-	-	5.389	-	-	-	-	-	-	-	-	-	-	-	-
4.2) Prior Years Cumulative Funding	A		-	-	6,296.296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) Mine Resistant Ambush Protected (MRAP)			-	-	6,297.150	-	-	5.389	-	-	-	-	-	-	-	-	-	-	-	-
5) Family of Counter-Improvised Explosive Device (C-IED) Capabilities																				
5.2) Counter-Improvised Explosive Devices (C-IED) ⁽³⁾	A		-	-	-	-	-	-	-	-	9.891	-	-	0.000	-	-	3.670	-	-	3.670
Subtotal: 5) Family of Counter-Improvised Explosive Device (C-IED) Capabilities			-	-	0.000	-	-	-	-	-	9.891	-	-	0.000	-	-	3.670	-	-	3.670
6) Prior Years Cumulative Funding																				
6.1) Other Prior Year	A		-	-	106.775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) Prior Years Cumulative Funding			-	-	106.775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	6,575.470	-	-	47.447	-	-	55.854	-	-	44.700	-	-	3.670	-	-	48.370

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

Footnotes:

⁽¹⁾ ABV FY20 increase of \$1.339M reflects realignment from EMK BLI 6670 supporting upgrades to mine plows, FSR sustainment support, TM updates and IA support through Toughbook procurement and refresh

⁽²⁾ FY20 will procure items such as; Supply Stock Lists (SL-3) equipment to include Counter-Weapons of Mass Destruction kits, Man Transportable Robotic System, Remote Fuze Disassembly kits, and Mini-Mira (active microwave, ultrasonic, and infrared detector). EOD tool kits include Chemical, Biological, Nuclear, Radiological and Explosive kits, Search kits, Tech kits, Tool kits, SL3 kits, X-Ray GO kits, and IED kits. FY19 will procure items such as; sensor detectors, video fiber optic scopes, Improvised Explosive Devices (IED)/Weapons of Mass Destruction (WMD) diagnostic kits and fusion optics.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 1	P-1 Line Item Number / Title: 6520 / EOD Systems	Aggregated Items Title: EOD Systems
⁽³⁾ FY 2019 Overseas Contingency Operations (OCO) Request: \$8.000M FAMILY OF COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) CAPABILITIES (F2C): (\$8.000M) Procures Husky Mounted Detection System Wire Detection (HMDS-WD) systems in support of R2C FoS Increment II Capabilities. This capability will yield faster, more effective route clearance missions, significantly improve chances of avoiding an explosive hazard strike, and better awareness of the enemy's tactics, techniques, and procedures. The current HMDS lacks the ability to find command wires associated with deeply buried IEDs, relying on the ground penetrating radar to find the IED main charge or container. FY 2020 Overseas Contingency Operations (OCO) Request: \$3.670M. FAMILY OF COUNTER-IMPROVISED EXPLOSIVE DEVICE (C-IED) CAPABILITIES (F2C): (\$3.670M) Procures hand-held buried wire detection devices while dismounted, to include sweeping suspected IED locations during dismounted operations. The outer portions of the hand-held buried wire detection device employs this capability as part of their mission to locate command wire.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 2: Materials Handling Equipment	P-1 Line Item Number / Title: 6438 / Physical Security Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	282.563	38.462	28.306	15.404	0.000	15.404	23.546	93.861	44.475	41.023	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	282.563	38.462	28.306	15.404	0.000	15.404	23.546	93.861	44.475	41.023	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	282.563	38.462	28.306	15.404	0.000	15.404	23.546	93.861	44.475	41.023	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Installation Physical Security provides precise, uniform technological solutions to manpower intensive security requirements. Systems used at bases and stations protected our most critical assets vital to operations - people, flight lines, classified information, Arms, Ammunition, and Explosives (AA&E), shorelines, open desert areas, critical assets and infrastructure and providing constant, vigilant capabilities that control and restrict access and provide notification of actual and attempted unauthorized intrusion. Mass Notification System (MNS) provides immediate notice and warning to personnel living and working aboard our bases and stations in the event of security breaches via interior and exterior speaker systems, telephones and computers in the event of natural disasters, terrorist activities, weather emergencies or other events requiring immediate guidance to ensure the safety and security of personnel. These systems upgrade and replace antiquated individually purchased systems that are costly to maintain and may not meet prescribed requirements for securing U.S. assets. The Marine Corps Electronic Security System (MCESS) Program provides a comprehensive electronic security system suite that supports collateral equipment including intrusion detection, surveillance, installation, and facility automated access control and tracking capabilities. These systems increase efficiency and effectiveness of available security manpower and improve security and safety at installation perimeter, flight line, restricted area, facility entry points and is now expanding to meet installation access control requirements. Ground-based radars support surveillance of the vast regions aboard Marine Corps installations such as expansive waterways, open airfields and desert areas (improved assessment at long distances) allowing for greater defensive posture and response capabilities.

Collateral Equipment (CE) funds the one time initial outfitting of equipment not defined as built-in for new facilities (MILCONs), newly renovated/refurbished facilities, and Host Nation funded construction projects. The one time procurement includes equipment such as Mass Notification Systems, Intrusion Detection Systems, Closed Circuit TVs, Information Technology switches and routers, Passive Optical Networks, Internal Grounding Systems, Voice over Internet Protocol (VOIP), Audio Visual/Video Teleconferencing Systems and other industrial equipment such as recycling and pulping systems, warehouse conveyor systems, and heavy maintenance equipment.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 2: Materials Handling Equipment					P-1 Line Item Number / Title: 6438 / Physical Security Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206313M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Physical Security Equipment				- / 282.563	- / 38.462	- / 28.306	- / 15.404	- / -	- / 15.404
P-40	Total Gross/Weapon System Cost				- / 282.563	- / 38.462	- / 28.306	- / 15.404	- / 0.000	- / 15.404
*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: Beginning in FY19, Identity Dominance System has been realigned from BLI 6438 PHYSICAL SECURITY EQUIPMENT, to BLI 4652, MODIFICATIONS KIT C4FIRE SUPPORT SYSTEM										
FY2018 Base Appropriation Request: \$38.462M										
Installation Physical Security \$10.648M: Funding obligation directed toward the procurement of physical security systems and program initiatives supporting flight line security, waterside/shoreline security, protection of classified material storage areas, AA&E and other critical assets. Funds will support the enhancement of command and control systems for the MCESS. As well as required upgrades to the family of systems to maintain compliance with DoD requirements to deploy an enterprise access control system capable of interfacing with DoD databases such as Defense Enrollment Eligibly Reporting System (DEERS) and other federal government authoritative databases. This funding also supported Defense Policy Review Initiatives (DPRI) for Guam, Okinawa, and Iwakuni. Financing executed by Space and Naval Warfare Center (SPAWAR), procured, installed and accredited, access control and intrusion detection for five MILCON projects. The five projects, funded by the Government of Japan (GoJ), are in direct support of the Futenma Replacement Facility (FRF) program. The GoJ projects are (1) MC0508-T Base Communications Building, (2) MC0510-T Exchange Complex, (3) MC0514-T Bachelor Enlisted Quarters C & D, (4) MC0590-T Magazines A-D, and (5) MC2579-T Electrical Substation. The FRF program is a bilateral agreement with the GoJ to support the relocation of operations at MCAS Futenma to Camp Schwab. Implementation of the installation physical access control systems approval occurred in FY17.										
Collateral Equipment \$27.814M: Funds procured equipment for one time initial outfitting of equipment for new construction (MILCONs) and newly renovated/refurbished facilities. Equipment included Electronic Security Systems such as Mass Notification, Access Control and Intrusion Detection for 25 facilities, Audio Visual (AV) and Video Teleconferencing (VTC) systems for 4 facilities, Passive Optical Networks (PON), Voice over Internet Protocol (VOIP), routers and switches for estimated 14 facilities, and Low Altitude Range Communications Systems (LARCS) for Johnson Valley Land Expansion at MCAGCC 29 Palms. Funds in the amount of \$4.000M were realigned from Utilities to Collateral Equipment higher priorities to complete the outfitting of all facilities that were coming to completion in FY18.										
FY2019 Base Appropriation Request: \$28.306M										
Installation Physical Security \$4.262M: Funds the procurement of physical security systems and program initiatives supporting flight line security, waterside/shoreline security, protection of SCIFS, AA&E and other critical assets. Funds will support the enhancement of command and control systems for the MCESS. Funding will also support upgrades to the family of systems to maintain compliance with federal and DoD requirements to deploy an enterprise access control system capable of interfacing with DoD databases such as DEERS and other federal government authoritative databases. This funding also supports DPRI Guam needs to install physical security measures at Futenma Replacement Facility Camp Schwab for multiple structures to include the electrical substation, the Weapons Assembly Facility, magazines, maintenance hangars, water storage tanks and camp gate upgrades. Also supports DPRI Okinawa installation of intrusion detection and mass notification systems on Camps Foster and Hansen for multiple facilities to include: fire stations, BEQs, BOQs, Commissary, Exchange, Garrison Maintenance Facility, main gates, and town center.										
The decrease in funding of \$6.386M from FY18 to FY19 is due to the implementation of funding for physical access control systems in the previous years.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 2: Materials Handling Equipment		P-1 Line Item Number / Title: 6438 / Physical Security Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206313M
Line Item MDAP/MAIS Code: N/A		
Collateral Equipment \$24.044M: Funds will procure security systems, AV, VTC, VOIP, routers, switches and industrial equipment for one time outfitting of new construction and renovated/refurbished facilities that will be close to completion in FY19. This includes 7 new facilities, and approx. 21 renovated facilities. FY2020 Base Appropriation Request: \$15.404M Installation Physical Security \$6.345M: Funding obligation directed toward the procurement of physical security systems and program initiatives supporting flight line security, waterside/shoreline security, protection of SCIFS, AA&E and other critical assets. Funding will also support upgrades to all protection equipment including intrusion detection, surveillance, installation and facility automated access control, and tracking capabilities to maintain compliance with Federal and DoD requirements. Funding will ensure critical assets are provided protection to approximately (10) Airfields, (138) flight line turnstiles, (65) flight line automated gates, (1347) AA&E facilities/spaces (i.e. magazines, armories, consolidated armory spaces, Ready Service Lockers (RSL's), (42) SCIFs, (12) facilities in support of the Joint Strike Fighter (JSF), (193) classified material storage spaces. There are an additional (1854) areas protected that include museums & museum warehouses, medical/dental/pharmacy facilities, banks/disbursing offices, site headquarters buildings & law centers, brigs, CID/evidence rooms, communication/network operation centers, gas stations & fuel farms, schools, warehouses, commissaries & exchanges, perimeter installation gate access points, installation perimeters (designated facilities), designated critical infrastructure (water towers, water treatment facilities, utility facilities), motor pools, general quarters & barracks (with MCESS MNS, IDS, & Access Control), building access control to all Marine Corps secure buildings, and simulator trainers. Funding in the amount of \$2.648M will also support the Defense Policy Review Initiatives (DPRI) Physical Security Requirements for Guam, Okinawa and Iwakuni. The increase in funding of \$2.083M from FY19 to FY20 is due to DPRI support. Collateral Equipment \$9.059M: Funds will procure security systems, AV, VTC, VOIP, routers and switches for one time outfitting of new construction and renovated/refurbished facilities that will be close to completion in FY20. The estimated number of facilities to be outfitted during FY20 is approximately 9, contingent upon completion dates of new and renovated facilities. FY2020 funding request was reduced by \$5.221M to account for the availability of prior year execution balances. It also reflects the type and number of facilities that will need to be outfitted with collateral equipment in FY20. The additional decrease from FY19 to FY20 is due to the flexibility of MILCON schedules.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 2							P-1 Line Item Number / Title: 6438 / Physical Security Equipment							Aggregated Items Title: Physical Security Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Collateral Equipment																				
1.1) Collateral Equipment	A		-	-	139.571	-	-	27.814	-	-	24.044	-	-	9.059	-	-	-	-	-	9.059
Subtotal: 1) Collateral Equipment			-	-	139.571	-	-	27.814	-	-	24.044	-	-	9.059	-	-	-	-	-	9.059
2) Installation Physical Security																				
2.1) Installation Physical Security	A		-	-	122.976	-	-	10.648	-	-	4.262	-	-	6.345	-	-	-	-	-	6.345
Subtotal: 2) Installation Physical Security			-	-	122.976	-	-	10.648	-	-	4.262	-	-	6.345	-	-	-	-	-	6.345
3) Prior Year Cumulative Funding																				
3.1) Prior Year Cumulative Funding	A		256,615.38	78	20.016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) Prior Year Cumulative Funding			-	-	20.016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	282.563	-	-	38.462	-	-	28.306	-	-	15.404	-	-	-	-	-	15.404

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

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property							P-1 Line Item Number / Title: 6522 / Field Medical Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	33.513	2.898	0.000	2.898	4.190	10.162	5.118	5.220	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	33.513	2.898	0.000	2.898	4.190	10.162	5.118	5.220	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	33.513	2.898	0.000	2.898	4.190	10.162	5.118	5.220	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
New start in FY19.

Family of Field Medical Equipment (FFME) is the sole organic medical capability for the Marine Corps, and is comprised of multiple and modular capabilities that provide the full spectrum of healthcare and life saving equipment on the battlefield. FFME provides medical equipment and supplies to medical units. This program's objective is to plan for lifecycle replacements and upgrades while also modernizing equipment in order to provide the most effective medical care for Marine and Sailors in any mission. Some items will replace current line items within the Authorized Medical Allowance Lists (AMAL) and provide increases in performance characteristics, and other items represent new, emerging technology not currently included in fielded capabilities which will provide improved clinical outcomes.

Family of Field Medical Equipment (FFME) is comprised of items such as:

The Authorized Medical Allowance List (AMAL) modernization is comprised of numerous assemblages required to support current standards of care and treatment protocols while enhancing capabilities for battlefield casualties such as: The Expeditionary Medical Refrigeration Unit (EMRU), Patient Active Warming System, Infrascanner Intracranial Pressure (ICP), Bloodborne Pathogen Test Kit, Expeditionary Portable Oxygen Generation System and the Acute Care Cover for Severely Injured Limbs.

The Forward Resuscitative Surgery System (FRSS) provides Level I and II Health Service Support (HSS). The FRSS is a highly mobile, rapidly deployable, trauma surgical unit that provides emergency surgical interventions to stabilize casualties that might otherwise die or lose limbs before reaching treatment. The FRSS is the lightest and most mobile of the Marine Corps HSS elements capable of providing trauma surgical care. The FRSS is modular, rapidly transportable and deployable by air or surface means. Included in the FRSS are medical materials, a shelter, ancillary equipment, and mobile electric power.

The Battalion Aid Station (BAS) AMAL provides the equipment necessary to support a BAS manned by a Medical Officer, a Physician Assistant and the Hospital Corpsman assigned to a Battalion or Squadron. One BAS AMAL provides initial resuscitative and stabilizing care for 50 surgical patients with major wounds. The BAS AMAL is scalable, expeditionary and employed to provide immediate pre-surgical resuscitation and stabilization of patients with battle injuries prior to transport to higher echelons of care. The BAS AMAL is rugged enough to survive rough handling and austere environments. Equipment and material contained in the BAS AMAL is similar to that used in garrison medical clinics and in FFME kits organic to supported units.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6522 / Field Medical Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
The Sick Call AMAL provides medical personnel with 30 days of equipment to treat 300 deployed Marines and Sailors for Disease and Non-Battle Injuries (DNBI). The Sick Call AMAL can be deployed independently or used to augment the BAS. The Sick Call AMAL is light, mobile, and capable of providing Level One Health Service Support (HSS) and it is ruggedized to survive rough handling and austere environments. Equipment and material contained in the Sick Call AMAL is similar to that used in garrison medical clinics and in FFME kits organic to supported units. The Shock Trauma Platoon (STP) AMAL provides equipment to perform initial resuscitative care for 50 non-surgical combat casualties for 30 days and establish 10 post trauma care patient holding litters for up to 48 hours. When co-located with the Forward Resuscitative Surgery System AMAL 645, the STP becomes a triage center and pre/postoperative care ward. STPs provide patient medical support for Surgical Companies deployed in its Area of Responsibility (AOR) or can be deployed independently to provide trauma resuscitation capabilities beyond that of the BAS. The AMALs are staffed by a mix of Emergency Medicine, Family Practice and support staff and the capabilities are scalable, rugged, easily transported and operate reliably in expeditionary environments. The En Route Care System (ERCS) provides equipment for the care of two critically injured/ill, but stabilized casualties in a theater operations for up to a two hour medical evacuation (MEDEVAC) flight from a field treatment facility to the next higher echelon of medical care. The ERCS is a modular system that includes medical equipment, medical treatment protocols and supplies. The Acute Care Ward AMAL provides the equipment necessary to support six cots and four critical care beds for up to 72 hours for each patient or 50-bed days total. The AMAL is scalable, rugged and operates reliably in expeditionary environments, provide medical equipment and supplies to perform clinical procedures for patient conditions for the Acute Care Ward for the first 30 days of deployment. The Acute Care Ward AMAL is employed within the Surgical Company and represents the primary patient holding capacity within the USMC medical capability portfolio. It is expected that the demand for this capability may increase in AORs that require distributed operations, have long evacuation distances, and have denied air space. Preventive Medicine AMALs contain the equipment necessary to provide technical preventive medicine advice, inspect food service operations, waste disposal, water potability vector control and surveillance, field sanitation, heat/cold injury prevention and disease surveillance and control measures for communicable diseases for 30 days. This AMAL is deployed with the Preventive Medicine Technician, Environmental Officer, or Industrial Hygiene Officer and is critical to the combat effectiveness in austere environments where personnel can be exceptionally susceptible to diseases and illnesses endemic to areas US forces are not frequently located. Digital Radiography Equipment program (AMAL 627) provides radiological capability to surgical trauma platoons to diagnose injuries and medical abnormalities. AMAL 627 contains equipment to support one x-ray machine and develop x-rays. The x-ray unit is a compact, mobile and lightweight system that enables all imaging functions to be performed at the point of patient care. The unit is comprised of a low capacity x-ray and a digitally computed radiographic (CR) reader, which scans the x-ray plates and displays the images on a laptop computer. The unit can be broken down into components for transportation and storage. It is operable and maintainable under all conditions of altitude, climate and terrain. The Laboratory AMAL provides the equipment to perform hematology, blood chemistry, urinalysis, blood banking, microbiology, and other miscellaneous laboratory tests essential to support a field medical facility treating casualties requiring surgery and trauma resuscitation. Laboratory AMALs are also used for the identification of non-battle related diseases which historically have claimed as many or more lives than combat itself and also has the potential to render troops non-combat effective due to illness. Further, it provides the capability to establish a blood bank for immediate supply of blood products to treat combat casualties during mass-casualty events. The Short Range Casualty Evacuation (CASEVAC) AMAL provides the Marine Corps with the capability to provide medical treatment during the air or ground evacuation of injured/ill personnel from the point of injury to a Surgical Company. The system provides the equipment and supplies necessary to provide care for up to eight patients, one critically injured/ill casualty, five other litter patients and two ambulatory patients for up to two hours flight time. The Field Dental Operatory Authorized Dental Allowance List (ADAL) provides dental services to the Marine Expeditionary Force (MEF). In an operational environment, the Dental Battalion's primary mission is to provide dental health maintenance with a focus on emergency care. ADALs contain equipment required by dentists and their technicians to perform dental procedures on Marines in an expeditionary environment and can be broken down into component sets or scaled down to fit the size and mission of the deploying unit. The ADAL is primarily designed for standalone dental treatment, but can be used in conjunction with other AMALs.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property					P-1 Line Item Number / Title: 6522 / Field Medical Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Field Medical Equipment				- / 0.000	- / -	- / 33.513	- / 2.898	- / -	- / 2.898
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 33.513	- / 2.898	- / 0.000	- / 2.898
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

FY 2018 Base Appropriation: \$0.000M

FY 2019 Base Appropriation: \$33.513M; BLI 6522 New Start FY19. Funding procures improved and modernized equipment for AMALs such as the Laboratory AMAL and the Acute Care Ward Equipment. Equipment procurements for these blocks will increase performance, reduce power requirements, and improve expeditionary capabilities to better support changes in USMC CONOPS for distributed operations. Funding will also procure equipment such as the Expeditionary Medical Refrigeration Unit (EMRU) which will replace the current Hemacool Refrigeration Unit currently employed in the Laboratory, FRSS and STP AMALs. Equipment such as the EMRU will provide significant increases in performance, using less than half of the current power than the Hemacool and able to run on batteries for more than twice the amount of time as the Hemacool (up to 48 hours), greatly improving the expeditionary capabilities of the supported AMALs. The EMRU expands clinical refrigeration capabilities beyond just blood products as it can be used for extended transport and storage of vaccines and reagents. Additionally, the EMRU uses new technology with EPA compliant gases and will not require the R-134a refrigerant used in the Hemacool which will be phased out by the Environmental Protection Agency (EPA) in FY19. Funding will procure critical shortfalls of Class VIII Medical Equipment Sets required in the USMC Prepositioning Objective (PREPO) which support two major Operation Plans (OPLANs). Currently, there are no surgical AMALs in PREPO as a result of the obsolescence and disposal of the Main Operating Room AMALs which presents a significant capability gap for medical support in major combat operations. The FY19 funds will close that gap entirely by procuring FRSS AMALs. There are no patient movement equipment AMALs in PREPO at this time; current OPLANs require the USMC to have the ability to move critically injured personnel and post-surgical patients both from the point of injury, and the forward deployed surgical site locations to the next echelon of medical care as detailed in Joint Publication 4-02. The FY19 funds will close that gap entirely by procuring En Route Care System AMALs. USMC policy designates Class VIII material as War Reserve Material (WRM) and aside from the capabilities maintained in the PREPO Program, there is a critical shortfall in WRM stocks which cannot be rapidly procured and configured on short notice. Currently each MEF maintains 15 Days of Supply (DOS) and the USMC Logistics Command (LOGCOM) does not maintain Class VIII War Reserve Material and Contingency Preparedness equipment sets and supplies for the Operating Force (OPFOR). The OPFOR (I and II MEF) have determined there are significant AMAL shortfalls across all AMAL types for the purpose of providing medical support for rapid, large scale deployments. Therefore, the MEFs must increase their AMAL stocking levels held in a contingency status in order to have the ability to rapidly deploy the medical capabilities required to support two concurrent, full Marine Expeditionary Brigades. FY19 funds will provide the initial issue of AMALs which will close this gap and significantly increase readiness.

FY 2020 Base Appropriation: \$2.898M procures improved and modernized equipment for AMALs such as the ERCS and CASEVAC, as well as the Field Dental Operatory ADAL. The ERCS AMAL provides the capability to AERO-MEDEVAC critical casualties and post-surgical patients with critical portable patient life support systems to the next echelon of care such as an Expeditionary Medical Facility, Army Combat Hospital, or Hospital Ship afloat. The CASEVAC AMAL provides the capability to rapidly evacuate patients from the point of injury on the battlefield, to a higher level of care such as the STP and FRSS Team. The Field Dental Operatory ADAL provides the capability to perform critical field surgical dentistry in combination with Trauma Resuscitative and Forward Surgical care, or as an independent capability which can significantly improve forward deployed readiness through treatments that can prevent MEDEVACs and keep troops in the fight. Equipment procurements for these blocks will increase performance, reduce power requirements, and improve expeditionary capabilities to better support changes in USMC CONOPS for distributed operations. Funding will procure equipment to support the Chemical Biological Incident Response Force capability to rapidly respond to incidents in the National Capital Region within mere hours of an occurrence, and also provides a pre-staged capability in support of planned efforts where an elevated readiness posture is required. Funding will also procure equipment such as the Expeditionary Portable Oxygen Generation System (EPOGS) which will replace the aging Portable Oxygenation Generation System (POGS) with a lighter, smaller, and more capable system that produces a higher concentration of oxygen which is a critical requirement to forward expeditionary medical care. Funding will also procure equipment such as Foldable High G-force Resistant Patient Litter (FHGRPL) which will replace the currently fielded TALON-3, which does not meet the recently approved Joint Patient Movement requirements for G-force resistance. The FHGRPL will greatly improve patient survivability of hard aircraft landings and help address the difficulties associated with Ground CASEVAC over challenging, rough terrain.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6522 / Field Medical Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
Decrease of \$30.615M from FY19 to FY20 reflects completed planned FY19 procurements for Acute Card Ward, Laboratory AMAL, FRSS and STP equipment. FY20 funding aligns with the scheduled AMAL review cycle.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3								P-1 Line Item Number / Title: 6522 / Field Medical Equipment							Aggregated Items Title: Field Medical Equipment				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Family of Field Medical Equipment																				
1.1) Authorized Medical Allowance List (AMAL) - Equipment	A		-	-	-	-	-	-	-	-	1.738	-	-	0.354	-	-	-	-	-	0.354
1.2) Acute Care Ward Equipment	A		-	-	-	-	-	-	-	-	1.230	-	-	-	-	-	-	-	-	-
1.3) Laboratory - Equipment	A		-	-	-	-	-	-	-	-	1.045	-	-	-	-	-	-	-	-	-
1.4) En Route Care System (ERCS) - Equipment ⁽¹⁾	A		-	-	-	-	-	-	-	-	14.000	-	-	1.500	-	-	-	-	-	1.500
1.5) Field Dental Operatory - ADAL Equipment	A		-	-	-	-	-	-	-	-	1.000	-	-	0.544	-	-	-	-	-	0.544
1.6) Short Range Casualty Evacuation (CASEVAC) - Equipment	A		-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
1.7) Forward Resuscitative Surgery System (FRSS) - Equipment ⁽²⁾	A		-	-	-	-	-	-	-	-	12.500	-	-	-	-	-	-	-	-	-
1.8) Shock Trauma Platoon (STP) - Equipment	A		-	-	-	-	-	-	-	-	2.000	-	-	-	-	-	-	-	-	-
Subtotal: 1) Family of Field Medical Equipment			-	-	0.000	-	-	-	-	-	33.513	-	-	2.898	-	-	-	-	-	2.898
Total			-	-	0.000	-	-	-	-	-	33.513	-	-	2.898	-	-	-	-	-	2.898

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

Footnotes:

⁽¹⁾ -FY19 Funding: The En Route Care System (ERCS) was never fielded for the Maritime Prepositioning Squadrons and the Marine Corps Prepositioning Program-Norway. The initial acquisition was only funded for the OPFORs. As a result this capability gap has been carried over for more than a decade despite the Prepositioning requirement for the USMC to provide critical patient movement equipment. FY19 funding will procure the ERCS AMAL to close this capability gap. - FY20 decrease aligns with the scheduled AMAL review cycle for the ERCS.

⁽²⁾ -FY19 Funding: The Forward Resuscitative Surgery System (FRSS) was never fielded for the Maritime Prepositioning Squadrons and the Marine Corps Prepositioning Program-Norway. The FRSS was fielded as a mobile, expeditionary surgical suite to replace the Main Operating Room AMALs, however the initial acquisition was only funded for the OPFORs. As a result, there is no USMC surgical capability in the Prepositioning Program in support of major OPLANs. FY19 funding will procure the FRSS AMAL to close this capability gap. -FY20 decrease aligns with the scheduled AMAL review cycle for the FRSS.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property							P-1 Line Item Number / Title: 6532 / Training Devices					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	929.404	72.512	64.040	149.567	0.000	149.567	125.398	106.072	58.736	85.179	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	929.404	72.512	64.040	149.567	0.000	149.567	125.398	106.072	58.736	85.179	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	929.404	72.512	64.040	149.567	0.000	149.567	125.398	106.072	58.736	85.179	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	0.051	-	-	-	-	-	-	-	-	0.051
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

COMBINED ARMS COMMAND AND CONTROL TRAINER UPGRADE SYSTEM (CACCTUS) upgrades Combined Arms Staff Trainer (CAST) at the 5 Approved Acquisition Objective (AAO) locations to provide a more immersive training opportunity for Marine Air Ground Task Force (MAGTF) staff elements in the areas of fire support employment, coordination, and integration. The upgraded system will support Marine Expeditionary Battalion (MEB) level training to effectively integrate current and emerging Communications Command Control Computers and Intelligence (C4I) systems. These funds will also support the procurement of system hardware.

COMMAND and CONTROL TRAINING and EDUCATION CENTER of EXCELLENCE (C2 TECOE) supports the five (5) MAGTF Integrated Systems Training Centers (MISTCs). The MISTCs, under the operational control of the C2 TECOE, are the primary Command and Control (C2) training venues for the Marine Corps operating forces for both individual and collective C2 systems sustainment training. The yearly funding is for equipment refresh and procurement of new training systems. A portion of the C2 computer systems are replaced each year to provide current systems for classroom and combat operation training in battle staff training for commanders and unit personnel.

DEPLOYABLE VIRTUAL TRAINING ENVIRONMENT (DVTE) is a laptop PC based simulation system capable of emulating organic and supporting Infantry Battalion weapons systems and training scenarios to facilitate Training and Readiness (T&R) based training, currently being fielded at the Battalion level. Its portable configuration allows Marines to train when they otherwise could not; aboard ship, at remote reserve locations and deployed. DVTE conducts multiple types of training such as language and culture training, platoon and squad level tactics, employment of supporting arms, and various Recognition of Combatants (ROC) packages. DVTE is part of a Commander's "training toolkit" contributing to the building block approach to standards based training focusing on achieving an improved level of combat readiness. Funding supports hardware refresh and integration/interoperability capabilities with operational forces' systems.

FAMILY OF COMBAT VEHICLE TRAINING SYSTEM (FCVTS) consists of the active duty Marine Corps' Combat Convoy Simulator (CCS) and the Combat Vehicle Training Systems which includes the Advanced Gunnery Training System (AGTS) for the M1A1 Abrams Tank and Light Armored Vehicle-25 (LAV-25), and the Amphibious Assault Vehicle Turret Training (AAV-TT). The CCS provides an immersive training environment in which Marines exercise combat skills including tactics, techniques and procedures for vehicle convoy operations in a variety of simulated road, terrain, weather, visibility and operational conditions. Tactical scenarios include weapons usage, target engagement, driver evasive action, vehicle coordination command and control procedures, Improvised Explosive Device (IED) defeat, and calls for fire, close air support and medical evacuation. The Combat Vehicle Training System (CVTS) provides full-fidelity, computer-based training systems for the M1A1 main battle tank, the Light Armored Vehicle (LAV) 25, and the Amphibious Assault Vehicle (AAV) vehicles. It provides full crew training without the need for fuel, ammunition, training areas and ranges. Training systems can be linked together allowing for section and platoon level training. Procurement funding supports technology refresh.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6532 / Training Devices
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
FORCE ON FORCE TRAINING SYSTEMS (FoFTS) provides realistic, non-live fire capabilities to perform force-on-force training and supports realistic, live fire force-on-target training. The program develops, fields and supports a suite of tactical engagement capabilities that enhance MAGTF training around the world and across the range of military operations. The program includes tactical training systems such as the Special Effects Small Arms Marking System (SESAMS) and advanced, instrumented, laser-based tactical engagement systems such as the Instrumented-Tactical Engagement Simulation System (I-TESS) that provide realistic weapons effects, position locating, and enhanced After Action Review (AAR) capability to support Live-Virtual-Constructive (LVC) events in the MAGTF Training Program curriculum. Funding supports procurement of company sets of Instrumented-Tactical Engagement Simulation System (I-TESS) training systems required to meet the Approved Acquisition Objective (AAO). IMMERSIVE TRAINING RANGE SUPPORT (ITRS) [FORMERLY SQUAD IMMERSIVE TRAINING ENVIRONMENT (SITE)] will provide II Marine Expeditionary Force (MEF) an outdoor Infantry Immersion Trainer (IIT) that will consist of small unit training ranges with urban structures finished and decorated to replicate geo-specific locations paired with integrated direct fire training systems, virtual simulation screens, and video instrumentation for after action review. The outdoor training environments closely replicate current operational threats by stimulating all senses to stress small unit actions and the small unit leader's tactical, moral, and ethical decision making within the context of operational culture. IIT provides the capability for small-unit rehearsal training and squad leader decision making for assessment and measurement. The immersive training environment seeks to suspend disbelief by closely replicating the actual operating environment, including realistic battlefield friendly and enemy effects to the level of fidelity that the perceived difference between the actual operational environment and immersive training environment is nearly indistinguishable to the training audience. This high-level of battlefield realism provides training exposure to operational complexities, mental and physical stressors, and tactical and ethical decision-making in a culturally accurate, threat accurate, and interactive environment. INDOOR SIMULATED MARKSMANSHIP TRAINER (ISMT) is a three (3) dimensional simulation based trainer for indoor use, capable of instructing in basic and advanced marksmanship, shoot/no-shoot judgment, combat marksmanship, and weapons employment tactics. The ISMT is used for remedial, virtual instruction to augment live fire upon simulated targets with an indication of the rounds fired. The ISMT systems are used both within the continental United States (CONUS) and Outside CONUS (OCONUS). The system has five (5) firing positions and is capable of operating simulated weapons such as AT4, M2 .50 Cal, M9, M16A4, M16A2 Fully Sensored, M240B, M203, MK19, M249 SAW, M870 12 gauge shotgun, SMAW, M224 60mm Mortar, M252 81mm Mortar, M4A1, Joint Services Combat Shotgun (JSCS), M27 Infantry Automatic Rifle (IAR), M32 Multi-shot Grenade Launcher, and the M72 Light Anti-Armor Weapon (LAW). MARINE AIR GROUND TASK FORCE (MAGTF) TACTICAL WARFARE SIMULATION (MTWS) is the Marine Corps' only constructive, aggregate-level simulation system used to support the training of Marine commanders and their battle staffs in MAGTF war-fighting principles/concepts and associated command and control procedures. Using complex computer-simulated behavior models, MTWS provides an interactive, decision-based, real-time, war game representing the six war-fighting functional areas of fires, command and control, force protection, logistics, maneuver, and intelligence. It's modeling breadth and flexibility enables users to represent and exercise a wide variety of combat scenarios to prepare leaders to face the military challenges of today's world. MTWS is designed to support the training of commanders and their staffs in exercises involving live and simulated land, air, and naval forces at all operational command levels. The system supports all levels of command throughout the MEF and Joint Task Force (JTF). MTWS can be used as a multi-sided war game, including red, blue, civilian, and non-aligned sides. The system can also be used to validate specific operational plans against a variety of enemy and environmental situations. Thus command personnel may examine alternative tactical solutions on a "what if" basis. MARINE CORPS DISTANCE LEARNING Program (MCDLP) provides the MarineNet E-Learning Infrastructure that enables Marines to receive training and education via interactive media, when and where training is needed. Distance Learning contributes to the Marine Corps' operational readiness by providing Marines with access to required Military Occupational Specialty (MOS), common skills training, and Professional Military Education (PME) training at 40 Learning Resource Centers (LRCs) located at Marine Corps bases and stations both CONUS and OCONUS. RANGES AND TRAINING AREA MANAGEMENT (RTAM) Baseline program modernizes major USMC base and station live training ranges to provide enhanced after action review with ground truth feedback, realistic representation of Opposing Forces (OPFOR) and enhanced range and exercise command and control capabilities. Integrating live and simulated training technologies, the fielded capabilities enhance live-fire, force-on-target, GUAM initiatives, and force-on-force training. Major system components of modernization include Military Operations on Urbanized Terrain (MOUT) facilities, inter-active targetry, battlefield effects simulators, individual and vehicle tracking systems, aviation tracking systems, Tactical Engagement Simulation Systems, simulated munitions, integrated simulation, and range control and exercise control information processing and situational awareness displays. Training is required to support the complexities of command and control, live-fire coordination in support of maneuver, and logistics operations in support of units at and above company level. Deploying operational units need access to instrumented, non live-fire and live-fire capable MOUT training facilities, urban sniper training capabilities, convoy operation/reaction course capability, Urban Close Air Support (CAS) ranges, and IED/EOD training capability in order to accomplish this training and bring the Marine Corps into the 21st century, to include a fully Immersive Infantry Trainer (IIT). These capabilities give deploying units the opportunity to better meet training requirements before exercising as a MAGTF and deploying to the combat theaters. Additionally lessons learned from Operation Iraqi Freedom (OIF) are driving the need for new training systems supporting a seamless training environment allowing crucial core capabilities to be available for all Marines at all sites at once.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6532 / Training Devices	
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M	
Line Item MDAP/MAIS Code: N/A			
SUPPORTING ARMS VIRTUAL TRAINER (SAVT) will advance the training capability, operational readiness, and tactical proficiency of USMC Joint Terminal Attack Controllers (JTACS), Forward Observers (FOs), and Forward Air Controllers (FACs). The personnel will use training scenarios that require the placement of simulated tactical ordnance on selected targets using Joint Close Air Support (JCAS) procedures and observed fire procedures for Naval Surface Fire Support (NSFS), artillery and mortar fire to perform destruction, neutralization, suppression, illumination/coordinated illumination, interdiction and harassment fire missions. TRAINING SIMULATION SUPPORT (TSS) program encompasses the procurement of low density, minor (low cost) MAGTF ground training equipment, simulators and simulations. These devices such as medical training kits, climbing walls, weapons models and mockups, enhance basic occupational and combat skills across the wide spectrum of tactics, techniques, procedures and proficiency. TSS for the most part is for commercial/service non-developmental training devices used by Marine Corps Schools of Infantry, Marine Corps Martial Arts Program, Recruit Depots, operating forces, bases, stations to support combat readiness. Funding provides capability for the USMC to conduct critical training and participate as a full-fledged member of several joint programs. UNITED STATES MARINE CORPS OPERATOR DRIVER SIMULATOR (USMC ODS) is a computer based operator driving simulator used to provide entry and sustainment level operator driving training for USMC operators. The simulator provides realistic experiences in vehicle operation in both on and off-road scenarios featuring various road and weather conditions. Cab configurations include interchangeable vehicle extension kits consisting of dash panel, faux armor panels, steering wheels and vehicle dynamics software to replicate Medium and Large Tactical Wheeled Vehicles. Funding supports the procurement of cab replacement. This line item includes funding specified for Defense Policy Review Initiative (DPRI) within the details above.			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property						P-1 Line Item Number / Title: 6532 / Training Devices				
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Training Devices				- / 929.404	- / 72.512	- / 64.040	- / 149.567	- / -	- / 149.567
P-40	Total Gross/Weapon System Cost				- / 929.404	- / 72.512	- / 64.040	- / 149.567	- / 0.000	- / 149.567
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: Overall Training Devices Accomplishments: Baseline requests provide for seamless training environments that continue to enhance training capabilities, modernize major USMC base and station live training ranges, provide enhanced after action review with ground truth feedback, realistic representation of OPFOR and enhanced range and exercise command and control capabilities. Without these training devices, Marines will not be properly trained and prepared for combat when deployed to combat theaters. FY2018 Base Appropriation Request: \$72.512M COMBINED ARMS COMMAND AND CONTROL TRAINER UPGRADE SYSTEM (CACCTUS) \$3.671M provided necessary hardware components (computers, projectors, racks and smart uninterrupted power supplies) and installation in support of the training systems at all five (5) authorized sites and the supporting test facility. COMMAND and CONTROL TRAINING and EDUCATION CENTER of EXCELLENCE (C2 TECOE) \$0.262M provided the procurement funding support for equipment refresh at the five (5) MAGTF Integrated Systems Training Centers (MISTCs). DEPLOYABLE VIRTUAL TRAINING ENVIRONMENT (DVTE) \$1.072M provided procurement funding support for the new phase of the hardware refresh of DVTE suites which will be accomplished 2017 to 2020. FORCE ON FORCE TRAINING SYSTEM (FoFTS) \$16.335M FY18 funds the procurement of sets of Instrumented-Tactical Engagement Simulation Systems (I-TESS) to support large scale battalion and joint level Force on Force training exercises with enhanced instrumentation systems for Armored vehicles and Crew Served Weapons. IMMERSIVE TRAINING RANGE SUPPORT (ITRS) [FORMERLY SQUAD IMMERSIVE TRAINING ENVIRONMENT (SITE)] \$18.759M FY18 funds allowed for procurement an outdoor Infantry Immersive Trainer (IIT) for increased IIT capacity at Camp Lejeune, NC to address II MEF and east coast Security Force Battalion operational unit throughput deficiencies. INDOOR SIMULATED MARKSMANSHIP TRAINER (ISMT) \$8.158M provided for the hardware refresh procurement of simulated weapons such as AT4, M2 .50 Cal, M9, M16A4, M16A2 Fully Sensored, M240B, M203, MK19, M249 SAW, M870 12 gauge shotgun, SMAW, M224 60mm Mortar, M252 81mm Mortar, M4A1, Joint Services Combat Shotgun (JSCS), M27 Infantry Automatic Rifle (IAR), M32 Multi-shot Grenade Launcher, and the M72 Light Anti-Armor Weapon (LAW) and for alteration of the ISMT space aboard the LPD Class 17 ships to baseline the compartments layout. MARINE AIR GROUND TASK FORCE (MAGTF) TACTICAL WARFARE SIMULATION (MTWS) \$0.426M provided hardware refresh in accordance with component refresh cycle. MARINE CORPS DISTANCE LEARNING PROGRAM (MCDLP) \$2.696M provided hardware, technical support and testing for the disaster recovery site for MarineNet and purchase yearly software license renewals. RANGES AND TRAINING AREA MANAGEMENT \$16.683M allowed for procurement of training systems and devices that support multiple ranges at various locations such as inter-active targetry, battlefield effects simulators, individual and vehicle tracking systems, and aviation tracking systems for live fire and non-live fire training ranges at the Marine Air Ground Task Force Training Center (MAGFTFC) and home										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6532 / Training Devices
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
station commands which is based on priorities established by Training & Education Command Range & Training Area Management division; as well as, provide funding for continued Integrated Range Status Systems (IRSS) re-capitalization.		
SUPPORTING ARMS VIRTUAL TRAINER (SAVT) \$4.212M provided the start of procurement funding to support the technical refresh to be accomplished over two years (2019 and 2020) at all sites including the test berth.		
TRAINING SIMULATIONS SUPPORT (TSS) \$0.238M allowed for the procurement of low density, minor (low cost) MAGTF ground training equipment, simulators and simulations. These devices such as medical training kits, bleeding simulation kits, weapons models and mockups, enhance basic occupational and combat skills across the wide spectrum of tactics, techniques, procedures and proficiency. The nature of equipment purchased is non-centrally managed consumables with a unit cost less than \$250K.		
FY2019 Base Appropriation Request: \$64.040M		
COMBINED ARMS COMMAND AND CONTROL TRAINER UPGRADE SYSTEM (CACCTUS) \$2.909M will provide necessary hardware components (computers, projectors, racks and smart uninterrupted power supplies) and installation in support of the training systems at all five (5) authorized sites and the supporting test facility.		
COMMAND and CONTROL TRAINING and EDUCATION CENTER of EXCELLENCE (C2 TECOE) \$0.413M will provide the procurement funding support for equipment refresh and procurement of new training systems at the five (5) MAGTF Integrated Systems Training Centers (MISTCs).		
DEPLOYABLE VIRTUAL TRAINING ENVIRONMENT (DVTE) \$0.947M will provide procurement funding support for the new phase of the hardware refresh of DVTE suites which will be accomplished 2017 to 2020.		
FORCE ON FORCE TRAINING SYSTEM (FoFTS) \$32.942M supports the procurement of 175 of the 346 CV-TESS kits; 1 battalion set and ancillary items of the 16 Authorized Acquisition Objective (AAO) for I-TESS III (1 battalion sets = individual instrumentation and ancillary equipment for 1053 Marines). All of which present an increased capability over the legacy I-TESS II system based on new requirements that the current system cannot meet. The legacy I-TESS II system has met its life cycle expectancy and is planned for DRMO upon fielding of the new systems. The increase of \$16.607M from FY18 to FY19 procures Force on Force Next capability which includes Combat Vehicle Tactical Engagement Simulator System (CV-TESS), and Instrumented-Tactical Engagement Simulation System (I-TESS) III.		
INDOOR SIMULATED MARKSMANSHIP TRAINER (ISMT) \$2.673M will provide for the hardware refresh procurement of simulated weapons such as AT4, M2 .50 Cal, M9, M16A4, M16A2 Fully Sensored, M240B, M203, MK19, M249 SAW, M870 12 gauge shotgun, SMAW, M224 60mm Mortar, M252 81mm Mortar, M4A1, Joint Services Combat Shotgun (JSCS), M27 Infantry Automatic Rifle (IAR), M32 Multi-shot Grenade Launcher, and the M72 Light Anti-Armor Weapon (LAW) and for alteration of the ISMT space aboard the LPD Class 17 ships to baseline the compartments layout. Decrease from FY18 to FY19 in the amount of \$5.485M is due to a reduction in the number of simulated weapons requiring refresh.		
MARINE AIR GROUND TASK FORCE (MAGTF) TACTICAL WARFARE SIMULATION (MTWS) \$0.752M will provide hardware refresh in accordance with component refresh cycle.		
MARINE CORPS DISTANCE LEARNING PROGRAM (MCDLP) \$0.875M will provide hardware, technical support and testing for the disaster recovery site for MarineNet.		
RANGES AND TRAINING AREA MANAGEMENT \$22.476M will allow for procurement of training systems and devices that support multiple ranges at various locations such as inter-active targetry, battlefield effects simulators, individual and vehicle tracking systems, and aviation tracking systems for live fire and non-live fire training ranges at the Marine Air Ground Task Force Training Center (MAGTFTC) and home station commands which is based on priorities established by Training & Education Command Range & Training Area Management division; as well as, provide funding for continued Integrated Range Status Systems (IRSS) re-capitalization. The \$5.793M increase in funds from FY18 to FY19 provides funding support for Expeditionary Operations Training Group (EOTG) Visit Board Search and Seizure (VBSS) training systems and is also the result of FY 2018 control being reduced by \$2.798M due to unjustified growth.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6532 / Training Devices
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M
Line Item MDAP/MAIS Code: N/A		
TRAINING SIMULATION SUPPORT (TSS) \$0.053M provides minimum procurement of low density, minor (low cost) MAGTF ground training equipment, simulators and simulations to include devices such as medical training kits, climbing walls, weapons models and mockups that enhance basic occupational and combat skills across the wide spectrum of tactics, techniques, procedures and proficiency. The nature of equipment purchased is non-centrally managed consumables with a unit cost less than \$250K.		
FY2020 Base Appropriation Request: \$149.567M		
The FY2020 funding request was reduced by \$14.776M to account for the availability of prior year execution balances.		
COMBINED ARMS COMMAND AND CONTROL TRAINER UPGRADE SYSTEM (CACCTUS) \$3.715M will provide necessary hardware components and installation in support of the training systems at all five (5) authorized sites and the supporting test facility. Increase of \$0.806M from FY19 to FY20 is due to final technology refreshes of non-IT items like projectors and simulation time display clocks for all 5 active duty sites and the supporting facility.		
COMMAND and CONTROL TRAINING and EDUCATION CENTER of EXCELLENCE (C2 TECOE) \$0.341M will provide the procurement funding support for equipment refresh and procurement of new training systems at the five (5) MAGTF Integrated Systems Training Centers (MISTCs). The FY2020 funding request was reduced by \$0.072M to account for the availability of prior year execution balances.		
DEPLOYABLE VIRTUAL TRAINING ENVIRONMENT (DVTE) \$1.437M will provide procurement funding support for the new phase of the hardware refresh of DVTE suites which will be accomplished over the next four (4) years (2017 to 2020). Increase of \$0.490M from FY19 to FY20 is due to increased numbers of DVTE systems at the locations being refreshed during FY20.		
FAMILY OF COMBAT VEHICLE TRAINING SYSTEM (FCVTS): \$10.006M will provide Combat Vehicle Training System a technology refresh beginning in FY20 for the M1A1 and LAV 25 Advanced Gunnery Training systems in order to mitigate emerging obsolescence issues from affecting the operational availability of the systems. Aging and increasingly unavailable system hardware and software components will be replaced with modern and readily available commercial solutions. Successful execution will extend system service-life and reduce increasing operations and maintenance costs. Increase of \$10.006M from FY19 to FY20 is due to technology refresh to mitigate obsolescence issues.		
FORCE ON FORCE TRAINING SYSTEM (FoFTS) \$53.749M will allow procurement of 64 of the 346 CV-TESS kits; and 4.5 battalion sets and ancillary items of the 16 AAO. All of which present an increased capability over the legacy I-TESS II system based on new requirements that the current system cannot meet. The increase of \$20.807M from FY19 to FY20 procures additional battalion sets and CV-TESS kits.		
INDOOR SIMULATED MARKSMANSHIP TRAINER (ISMT) \$2.872M will provide for the hardware refresh procurement of simulated weapons such as AT4, M2 .50 Cal, M9, M16A4, M16A2 Fully Sensored, M240B, M203, MK19, M249 SAW, M870 12 gauge shotgun, SMAW, M224 60mm Mortar, M252 81mm Mortar, M4A1, Joint Services Combat Shotgun (JSCS), M27 Infantry Automatic Rifle (IAR), M32 Multi-shot Grenade Launcher, and the M72 Light Anti-Armor Weapon (LAW) and for alteration of the ISMT space aboard the LPD Class 17 ships to baseline the compartments layout. Increase of \$0.199M from FY19 to FY20 is due to procurement of weapons for additional locations and a LPD Class 17 ship alteration.		
MARINE AIR GROUND TASK FORCE (MAGTF) TACTICAL WARFARE SIMULATION (MTWS) \$0.619M will provide hardware refresh in accordance with component refresh cycle. The FY2020 funding request was reduced by \$0.133M to account for the availability of prior year execution balances.		
MARINE CORPS DISTANCE LEARNING PROGRAM (MCDLP) \$1.013M will provide hardware, technical support and testing for the disaster recovery site for MarineNet. Increase of \$0.138M from FY19 to FY20 is due to having the Continuity of Operations (COOP) move to Amazon Government Cloud based solution.		
RANGES AND TRAINING AREA MANAGEMENT \$28.017M will provide funding for continued Integrated Range Status Systems (IRSS) re-capitalization. It will allow for the procurement of training systems and devices that support multiple ranges at various locations such as inter-active targetry, battlefield effects simulators, individual and vehicle tracking systems, and aviation tracking systems for live fire and non-live fire training ranges at the MAGTFTC and home station commands which is based on priorities established by Training & Education Command Range & Training Area Management division. The \$5.542M		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6532 / Training Devices	
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206623M	
Line Item MDAP/MAIS Code: N/A			
increase in funds from FY19 to FY20 is for procurement of training systems and devices that support the Live Fire Training Range at the Northwest Field at Andersen AFB (DPRI GUAM) in support of Marine Corps Known Distance Rifle Range and Pistol Ranges. UNITED STATES MARINE CORPS OPERATOR DRIVER SIMULATOR (USMC ODS) \$47.797M supports the procurement of cab replacements in order to mitigate obsolescence issues from affecting the operation availability of the systems. Cab configurations include interchangeable vehicle extension kits consisting of dash panel, faux armor panels, steering wheels and vehicle dynamics software to replicate Medium and Large Tactical Wheeled Vehicles. Increase of \$47.797M from FY19 to FY20 is due to cab replacement requirement to mitigate obsolescence issues.			

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3								P-1 Line Item Number / Title: 6532 / Training Devices							Aggregated Items Title: Training Devices					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) CACCTUS																				
1.1) CACCTUS Lab Equipment/Hardware	A		-	-	42.884	-	-	3.671	-	-	2.909	-	-	3.715	-	-	-	-	-	3.715
1.2) CACCTUS Peripherals	A		-	-	0.150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.3) CACCTUS Software Licenses	A		-	-	0.250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.4) CACCTUS Hardware Support Services	A		-	-	0.740	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.5) CACCTUS NAVAIR Database Correlation	A		-	-	0.248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 1) CACCTUS			-	-	44.272	-	-	3.671	-	-	2.909	-	-	3.715	-	-	-	-	-	3.715
2) C2TECOE																				
2.1) C2TECOE - Lab Equipment			-	-	3.266	-	-	0.162	-	-	0.313	-	-	0.241	-	-	-	-	-	0.241
2.2) C2TECOE - Training Systems			-	-	0.881	-	-	0.100	-	-	0.100	-	-	0.100	-	-	-	-	-	0.100
Subtotal: 2) C2TECOE			-	-	4.147	-	-	0.262	-	-	0.413	-	-	0.341	-	-	-	-	-	0.341
3) DVTE																				
3.1) DVTE Phase III Hardware Refresh	A		-	-	1.270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3.2) DVTE Technical Refresh			-	-	2.229	-	-	1.072	-	-	0.947	-	-	1.437	-	-	-	-	-	1.437
Subtotal: 3) DVTE			-	-	3.499	-	-	1.072	-	-	0.947	-	-	1.437	-	-	-	-	-	1.437
4) FoFTS																				
4.1) FoFTS ITESS Training Systems	A		-	-	-	-	-	16.335	-	-	12.000	-	-	45.000	-	-	-	-	-	45.000
4.2) Barrel Kits (SESAMS)	A		-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
4.4) FoFTS CVTESS Training System	A		-	-	-	-	-	-	-	-	20.942	-	-	7.749	-	-	-	-	-	7.749
Subtotal: 4) FoFTS			-	-	0.000	-	-	16.335	-	-	32.942	-	-	53.749	-	-	-	-	-	53.749
5) (FCVTS) Family of Combat Vehicle Training Sys																				
5.1) CCS Technical Refresh	A		-	-	21.000	-	-	-	-	-	-	-	-	10.006	-	-	-	-	-	10.006
Subtotal: 5) (FCVTS) Family of Combat Vehicle Training Sys			-	-	21.000	-	-	-	-	-	-	-	-	10.006	-	-	-	-	-	10.006
6) ISMT																				
6.1) Modify/Alter ISMT space aboard LPD17 Class platform	A		-	-	-	-	-	0.200	-	-	0.200	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3								P-1 Line Item Number / Title: 6532 / Training Devices							Aggregated Items Title: Training Devices					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
6.2) ISMT Hardware Refresh (multiple locations and configurations)	A		-	-	23.702	-	-	7.958	-	-	2.473	-	-	2.872	-	-	-	-	-	2.872
6.3) ISMT Hardware Labor Support	A		-	-	0.190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6.4) ISMT Hardware Contractor Logistics Support	A		-	-	0.239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 6) ISMT			-	-	24.131	-	-	8.158	-	-	2.673	-	-	2.872	-	-	-	-	-	2.872
7) MTWS																				
7.1) MTWS Hardware and Software Refresh	A		-	-	-	-	-	0.426	-	-	0.752	-	-	0.619	-	-	-	-	-	0.619
Subtotal: 7) MTWS			-	-	0.000	-	-	0.426	-	-	0.752	-	-	0.619	-	-	-	-	-	0.619
8) MCDLP																				
8.1) MCDLP NAVAIR WR - Support	A		-	-	-	-	-	1.338	-	-	0.875	-	-	0.900	-	-	-	-	-	0.900
8.2) MCDLP NAVAIR Hardware Contract	A		-	-	-	-	-	0.500	-	-	-	-	-	0.113	-	-	-	-	-	0.113
8.3) MCDLP MITRE Test Programs	A		-	-	-	-	-	0.858	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) MCDLP			-	-	0.000	-	-	2.696	-	-	0.875	-	-	1.013	-	-	-	-	-	1.013
9) Ranges and Training Area Management																				
9.1) RM/T Multiple Instrum, MOUT, Targetry and BES TNG SYS and Range Re-Cap			-	-	310.947	-	-	16.560	-	-	22.476	-	-	14.380	-	-	-	-	-	14.380
9.2) Simulated Weapon Systems (MK19 & M41)	A		-	-	2.721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.3) RM/T Support	A		-	-	2.027	-	-	0.086	-	-	-	-	-	0.290	-	-	-	-	-	0.290
9.4) IRSS Re-Capitalization	A		-	-	2.716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.5) RMT Ranges Instrumentation (GUAM)	A		-	-	0.031	-	-	0.037	-	-	-	-	-	13.348	-	-	-	-	-	13.348
Subtotal: 9) Ranges and Training Area Management			-	-	318.442	-	-	16.683	-	-	22.476	-	-	28.018	-	-	-	-	-	28.018
10) SAVT																				
10.1) SAVT Hardware Refresh	A		-	-	1.419	-	-	2.218	-	-	-	-	-	-	-	-	-	-	-	-
10.2) SAVT Hardware Refresh Labor Support/CLS	A		-	-	-	-	-	0.794	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3							P-1 Line Item Number / Title: 6532 / Training Devices									Aggregated Items Title: Training Devices				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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)
10.3) SAVT - Post Deployment Software Support	A		-	-	-	-	-	1.200	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) SAVT			-	-	1.419	-	-	4.212	-	-	-	-	-	-	-	-	-	-	-	-
11) IMMERSIVE TRAINING RANGE SUPPORT (ITRS)																				
11.1) ITRS IIT NAVFAC Training Sys Equipment Tasks	B		-	-	-	-	-	18.759	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) IMMERSIVE TRAINING RANGE SUPPORT (ITRS)			-	-	0.000	-	-	18.759	-	-	-	-	-	-	-	-	-	-	-	-
12) TSS																				
12.1) Training Simulation Support (TSS) Training Aids			-	-	13.490	-	-	0.238	-	-	0.053	-	-	-	-	-	-	-	-	-
Subtotal: 12) TSS			-	-	13.490	-	-	0.238	-	-	0.053	-	-	-	-	-	-	-	-	-
13) USMC ODS																				
13.1) ODS Training System Hardware	A		-	-	-	-	-	-	-	-	-	-	-	47.797	-	-	-	-	-	47.797
Subtotal: 13) USMC ODS			-	-	0.000	-	-	-	-	-	-	-	-	47.797	-	-	-	-	-	47.797
14) Prior Years Cumulative Funding																				
14.1) Other Prior Year			-	-	499.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 14) Prior Years Cumulative Funding			-	-	499.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	929.404	-	-	72.512	-	-	64.040	-	-	149.567	-	-	-	-	-	149.567

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

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property							P-1 Line Item Number / Title: 6544 / Family of Construction Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	216.183	33.763	59.856	35.622	0.000	35.622	30.819	41.362	30.866	31.482	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	216.183	33.763	59.856	35.622	0.000	35.622	30.819	41.362	30.866	31.482	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	216.183	33.763	59.856	35.622	0.000	35.622	30.819	41.362	30.866	31.482	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	0.053	0.054	-	0.054	0.055	0.058	0.056	0.057	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Family of Construction Equipment (FCE) provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps construction equipment. Funding supports equipment to conduct engineer missions such as constructing counter-mobility obstacles, building pioneer roads, establishing survivability positions, development of expeditionary airfields and general engineering support to forward operating bases and lodgment areas. Construction Equipment includes: Airfield Damage Repair (ADR) Kit which is capable of creating useable landing surfaces by new construction or repair of existing facilities. The ADR Kit uses modern development in construction equipment and materials, is easily deployable, flexible enough to work in all geographic locations and environments, and can quickly repair craters and spalls of all sizes. It also includes the High Mobility Engineer Excavator (HMEE) which is a self-deployable excavation system with attachments to execute a wide range of mobility, counter-mobility, general engineering and survivability missions. Family of Material Handling Equipment (FMHE) line is a roll-up line that provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps MHE such as forklifts, cranes, and container handlers. This budget line item also includes funding for equipment such as the Light Capability Rough Terrain Forklift (LCRTF), Hydraulic Excavator (HYEX), Extendable Boom Forklift Modernization (EBFL-M), Rough Terrain Container Handler (RTCH) SLEP and the Tractor, Rubber Tires, and Articulated Steering, Multiple Purpose (TRAM) SLEP. Command Support Equipment - Provides for the procurement/replacement of equipment such as Class 3 (Non-industrial) and Class 4 (Industrial) equipment with system unit cost of \$250K or greater, to support the operation and mission of United States Marine Corps ground bases, air stations and districts for existing facilities. Garrison Mobile Engineer Equipment (GMEE) - The Garrison Mobile Engineering Equipment (GMEE) program is a centrally-managed program for the procurement of commercial construction and engineering equipment such as graders, backhoes, cranes and other construction equipment. It provides logistical support for facilities and road maintenance, force protection barrier construction and airfield engineering. Material Handling Equipment (MHE) - The Material Handling Equipment (MHE) program is a centrally-managed program for the procurement of a portfolio of replacement equipment such as forklifts, warehouse cranes and platform trucks, to include Rough Terrain Container Handler (RTCH).												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-		
	Total Obligation Authority	31.139	57.574	33.287	-	33.287	28.438	38.934	28.385	28.951		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property					P-1 Line Item Number / Title: 6544 / Family of Construction Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0206624M			
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.624	2.282	2.335	-	2.335	2.381	2.428	2.481	2.531
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	33.763	59.856	35.622	-	35.622	30.819	41.362	30.866	31.482

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property						P-1 Line Item Number / Title: 6544 / Family of Construction Equipment				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206624M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Family of Construction Equipment	P-5a, P-21			- / 216.183	- / 33.763	- / 59.856	- / 35.622	- / -	- / 35.622
P-40	Total Gross/Weapon System Cost				- / 216.183	- / 33.763	- / 59.856	- / 35.622	- / 0.000	- / 35.622
*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: FY2018 Base Appropriation Request: \$33.764M (ACTIVE: \$31.135M/RESERVE: \$2.624M) Family of Construction Equipment - \$21.392M (ACTIVE: \$20.119M/RESERVE: \$1.273M): Funds continue to fund the procurement of the Airfield Damage Repair Kits and Integrated Logistics Support for the Family of Construction Equipment programs. The ADR kit is capable of creating expedient repairs to useable landing surfaces by new construction or repair of existing facilities. ADR Kit(s) have the capability to support repairs for (6) 10-foot diameter concrete craters and (15) 10-foot diameter asphalt craters as well as 45 spalls. Family of Material Handling Equipment - \$2.492M (ACTIVE: \$1.141M/RESERVE: \$1.351M): Funds will procure the All-Terrain Crane (ATC/MAC-50) SLEP and Rough Terrain Container Handlers (RTCH) SLEP to replace non-operational and over-aged cranes and forklifts required to support the operation and mission of the USMC Bases and Stations. Material Handling Equipment - \$1.710M: Funds procured a portfolio of warehouse tractors, narrow aisle forklifts (4,000 to 20,000 lbs.), warehouse cranes and platform trucks to include Container Handlers to recapitalize over-aged equipment needed for loading, unloading, and movement of supplies at designated ports, warehouses, passenger/cargo terminals and landfills to better support the operation and mission of the USMC Bases and Stations. Additionally, funds will procure equipment used to maintain ranges, training areas and fight wild-land fires. Garrison Mobile Engineering Equipment - \$3.893M: Funds procured commercial engineering equipment to replace non-operational and over-aged light, medium or heavy duty tractors, road and runway sweepers, loaders, excavators, bulldozers, and scrapers required to comply with mandates and that will improve readiness for necessary equipment used for construction and maintenance of roads, improvements and maintenance of facilities, ranges, training areas, air fields and maintain landfills to better support the operation and mission of the USMC Bases and Stations. Command Support Equipment - \$4.277M: Funds procured an emergency power generator for MCAGCC Twenty-nine Palms, CA and one 3D metal printer for Marine Corps Logistics Base, GA. FY2019 Base Appropriation Request: \$59.856M (ACTIVE: \$57.574M/RESERVE: \$2.282M) Family of Construction Equipment - \$10.218M (ACTIVE: \$8.939M/RESERVE: \$1.279M): Funds continue to fund the procurement of the Airfield Damage Repair (ADR) Kits and Integrated Logistics Support for the Family of Construction Equipment programs. The ADR kit is capable of creating expedient repairs to useable landing surfaces by new construction or repair of existing facilities. ADR Kit(s) have the capability to support repairs for (6) 10-foot diameter concrete craters and (15) 10-foot diameter asphalt craters as well as 45 spalls. It will also fund the High Mobility Engineer Excavator (HMEE) which is a self-deployable excavation system with attachments to execute a wide range of mobility, counter-mobility, general engineering and survivability missions. Funding decreased from FY18 to FY19 by \$11.174M due to accelerating the procurement of Air Field Damage Repair Kits while meeting the Approved Acquisition Objectives outlined in the Total Force Structure Management System. Family of Material Handling Equipment - \$33.187M (ACTIVE: \$32.184M/RESERVE: \$1.003M): Funds will continue to procure the All-Terrain Crane (ATC/MAC-50) as well as Rough Terrain Container Handlers (RTCH) SLEP to replace non-operational forklifts and modernization efforts, required to support the operation and mission of the Operational Forces and Contingency Operations. Funding increased from FY18 to FY19 by \$30.695M which continues to support the procurement All-Terrain Crane (ATC/MAC-50) SLEP and Rough Terrain Container Handlers (RTCH) SLEP to replace non-operational forklifts and modernization efforts, required to support the operation and mission of the Operational Forces and Contingency Operations, Technical Manuals and Integrated Logistics Support.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property		P-1 Line Item Number / Title: 6544 / Family of Construction Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206624M
Line Item MDAP/MAIS Code: N/A		
Material Handling Equipment - \$1.938M: Funds will procure a portfolio of warehouse tractors, narrow aisle forklifts (4,000 to 20,000 lbs.), warehouse cranes and platform trucks to include Container Handlers to recapitalize over-aged equipment needed for loading, unloading, and movement of supplies at designated ports, warehouses, passenger/cargo terminals and landfills to better support the operation and mission of the USMC Bases and Stations. Additionally, funds will procure equipment used to maintain ranges and fight wild-land fires. Garrison Mobile Engineering Equipment - \$14.122M: Funds will procure commercial engineering equipment to recapitalize non-operational and over-aged light, medium or heavy duty tractors, road and runway sweepers, loaders, excavators, bulldozers, and scrapers required recapitalize equipment used for construction and maintenance of roads, improvements and maintenance of facilities, ranges, training areas, air fields and maintain landfills to better support the operation and mission of the USMC Bases and Stations. Engineer equipment procured for California Bases and Station will comply with mandates California Air Resource Board (CARB), to reduce greenhouse gas emissions over the coming decade while improving air quality. Non-compliance results in fines of \$10k per day, per vehicle. Command Support Equipment - \$0.391M: Funds will procure Open Water Spill Response boat for MCAS Cherry Point, NC. FY2020 Base Appropriation Request: \$35.622M (ACTIVE: \$33.287M/RESERVE: \$2.335M) Family of Construction Equipment - \$11.630M (ACTIVE: \$10.320M/RESERVE: \$1.310M): Funds will continue to procure the High Mobility Engineer Excavator (HMEE) which is a self-deployable excavation system with attachments to execute a wide range of mobility, counter-mobility, general engineering and survivability missions. Funding increased from FY19 to FY20 by \$1.412M to continue the procurement of the HMEE. Family of Material Handling Equipment - \$15.233M (ACTIVE: \$14.208M/RESERVE: \$1.025M): Funds will procure the All-Terrain Crane (MAC-50) as well as Rough Terrain Container Handlers (RTCH) SLEP to replace non-operational forklifts and modernization efforts, required to support the operation and mission of the Operational Forces and Contingency Operations. Funding decreased from FY19 to FY20 by \$17.954M due to a reduction of production quantities as well as the RTCH Technical Manuals and Integrated Logistics Support being completed in FY19. Material Handling Equipment (MHE) - \$2.535M: Funds will procure a portfolio of warehouse tractors, narrow aisle forklifts (4,000 to 20,000 lbs.), warehouse cranes and platform trucks to include Container Handlers to recapitalize over-aged equipment needed for loading, unloading, and movement of supplies at designated ports, warehouses, passenger/cargo terminals and landfills to better support the operation and mission of the USMC Bases and Stations. Additionally, funds will procure equipment used to maintain ranges, training areas and fight wild-land fires. Funding increased from FY19 to FY20 by \$.655M to recapitalize the MHE fleet required to reduce the over-aged replacement backlog, improve material readiness, and support the operation and mission of the USMC Bases and Stations. Garrison Mobile Engineering Equipment - \$5.788M: Funds will procure commercial engineering equipment to recapitalize non-operational and over-aged light, medium or heavy duty tractors, road and runway sweepers, loaders, excavators, bulldozers, and scrapers that will improve the readiness for necessary equipment used for construction and maintenance of roads, improvements and maintenance of facilities, and maintain landfills to better support the operation and mission of the USMC Bases and Stations. Engineer equipment procured for California Bases and Station will comply with mandates California Air Resource Board (CARB), to reduce greenhouse gas emissions over the coming decade while improving air quality. Non-compliance results in fines of \$10k per day, per vehicle. Funding decrease from FY19 to FY20 by \$10.2M do to a FY19 Congressional add for High Mobility Engineer Excavators, of which \$0.865M will be used for Townsend Bombing Range (TBR)to procure heavy equipment (dozers, graders, tractors, excavators, etc.) to conduct site sustainment, modernize and expand the range to accommodate air-to-ground delivery of precision guided munitions (PGM). Funding increased from FY19 to FY20 by \$1.866M to recapitalize the engineer fleet required to reduce the over-aged replacement backlog, improve material readiness, and support the operation and mission of the USMC Bases and Stations as well as procure heavy equipment for TBR. Command Support Equipment - \$0.436M: Funding will support life cycle replacement of warehouse conveyor system MCB Camp Lejeune, NC.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3							P-1 Line Item Number / Title: 6544 / Family of Construction Equipment								Aggregated Items Title: Family of Construction Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Family of Construction Equipment																				
1.1) Laser Leveling System	A		499,676.47	34	16.989	-	-	3.500	-	-	3.500	-	-	-	-	-	-	-	-	-
1.2) Marine Corps Tactical Weld Shop ^(†)	A		134,956.79	162	21.863	142,000.00	2	0.284	-	-	-	-	-	-	-	-	-	-	-	
1.3) Marine Corps Tactical Weld Shop-Reserves ^(†)	A		222,200.00	10	2.222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.4) High Mobility Engineer Excavator (HMEE)	A		-	-	-	-	-	-	-	-	2.000	-	-	9.906	-	-	-	-	-	9.906
1.5) High Mobility Engineer Excavator (HMEE)-Reserves	A		-	-	-	-	-	-	-	-	-	-	-	1.310	-	-	-	-	-	1.310
1.6) Airfield Damage Repair Kit ^(†)	A		1,407K	11	15.482	2,319K	7	16.233	1,012K	3	3.036	-	-	-	-	-	-	-	-	-
1.7) Airfield Damage Repair Kit - Reserves ^(†)	A		-	-	-	1,273K	1	1.273	1,279K	1	1.279	-	-	-	-	-	-	-	-	-
1.8) Prior Years Cumulative Funding	A		-	-	135.135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.9) Family of Construction Equipment Integrated Logistics Support	A		-	-	13.780	-	-	0.101	-	-	0.403	-	-	0.414	-	-	-	-	-	0.414
Subtotal: 1) Family of Construction Equipment			-	-	205.471	-	-	21.391	-	-	10.218	-	-	11.630	-	-	-	-	-	11.630
2) Family of Material Handling Equipment																				
2.1) Rough Terrain Container Handler SLEP	A		-	-	-	-	-	-	-	-	18.908	-	-	4.996	-	-	-	-	-	4.996
2.2) All-Terrain Crane 50 Ton SLEP	A		-	-	-	-	-	-	-	-	10.941	-	-	9.212	-	-	-	-	-	9.212
2.3) All-Terrain Crane 50 Ton SLEP-Reserves	A		-	-	-	-	-	-	-	-	1.003	-	-	1.025	-	-	-	-	-	1.025
2.4) Material Handling Equipment Integrated Logistics Support	A		-	-	1.166	-	-	2.492	-	-	2.335	-	-	-	-	-	-	-	-	-
Subtotal: 2) Family of Material Handling Equipment			-	-	1.166	-	-	2.492	-	-	33.187	-	-	15.233	-	-	-	-	-	15.233
3) Garrison Mobile Engineering Equipment																				
3.1) Garrison Mobile Engineering Equipment	A		-	-	2.007	-	-	3.893	-	-	14.122	-	-	5.788	-	-	-	-	-	5.788

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3							P-1 Line Item Number / Title: 6544 / Family of Construction Equipment							Aggregated Items Title: Family of Construction Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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: 3) Garrison Mobile Engineering Equipment			-	-	2.007	-	-	3.893	-	-	14.122	-	-	5.788	-	-	-	-	-	5.788
4) Material Handling Equipment																				
4.1) Material Handling Equipment	A		-	-	1.031	-	-	1.710	-	-	1.938	-	-	2.535	-	-	-	-	-	2.535
Subtotal: 4) Material Handling Equipment			-	-	1.031	-	-	1.710	-	-	1.938	-	-	2.535	-	-	-	-	-	2.535
5) Command Support Equipment																				
5.1) Command Support Equipment	A		-	-	6.508	-	-	4.277	-	-	0.391	-	-	0.436	-	-	-	-	-	0.436
Subtotal: 5) Command Support Equipment			-	-	6.508	-	-	4.277	-	-	0.391	-	-	0.436	-	-	-	-	-	0.436
Total			-	-	216.183	-	-	33.763	-	-	59.856	-	-	35.622	-	-	-	-	-	35.622

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

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3				P-1 Line Item Number / Title: 6544 / Family of Construction Equipment					Aggregated Items: Family of Construction Equipment			
Item Number / Title [DODIC]	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) Family of Construction Equipment												
1.2) Marine Corps Tactical Weld Shop		2016	Caroline Growler, Inc / Star, NC	C / FFP	MCSC Quantico, VA	Jun 2016	Jun 2017	48	129,000.00	Y		Jun 2014
1.2) Marine Corps Tactical Weld Shop		2017 ⁽¹⁾	Caroline Growler, Inc / Star, NC	C / FFP	MCSC Quantico, VA	Feb 2017	Oct 2017	89	124,987.00	Y		Jun 2014
1.2) Marine Corps Tactical Weld Shop		2018	Caroline Growler, Inc / Star, NC	C / FFP	MCSC Quantico, VA	Dec 2017	Aug 2018	2	142,000.00	Y		Jun 2014
1.3) Marine Corps Tactical Weld Shop-Reserves		2016	Carolina Growler, Inc / Star, NC	C / FFP	MCSC Quantico, VA	Oct 2015	Sep 2017	10	132,200.00	Y		Jun 2014
1.6) Airfield Damage Repair Kit		2017	DIGITIZED SCHEMATIC SOLUTIONS LLC / Warren, MI	SS / FFP	MCSC Quantico, VA	Sep 2017	Jul 2018	11	1,407K	Y		Jun 2017
1.6) Airfield Damage Repair Kit		2018	DIGITIZED SCHEMATIC SOLUTIONS LLC / Warren, MI	SS / FFP	MCSC Quantico, VA	Nov 2017	Nov 2018	7	2,319K	Y		Jun 2017
1.6) Airfield Damage Repair Kit		2019	DIGITIZED SCHEMATIC SOLUTIONS LLC / Warren, MI	SS / FFP	MCSC Quantico, VA	Nov 2018	Apr 2019	3	1,012K	Y		Jun 2017
1.7) Airfield Damage Repair Kit - Reserves		2018	DIGITIZED SCHEMATIC SOLUTIONS LLC / Warren, MI	C / TBD	MCSC Quantico, VA	Oct 2017	Oct 2017	1	1,273K	Y		
1.7) Airfield Damage Repair Kit - Reserves ^(†)		2019	DIGITIZED SCHEMATIC SOLUTIONS LLC / Warren, MI	SS / FFP	MCSC Quantico, VA	Nov 2018	May 2019	1	1,279K	Y		Jun 2017

^(†) indicates the presence of a P-21

Footnotes:

⁽¹⁾ FY2016 and FY2017 exercising Delivery Orders against Basic Contract

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3										P-1 Line Item Number / Title: 6544 / Family of Construction Equipment										Aggregated Items: Family of Construction Equipment												
Items (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016												Calendar Year 2017													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1) Family of Construction Equipment																																
1.7) Airfield Damage Repair Kit - Reserves																																
	48	2019	NAVY		1	0	1																									1
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3										P-1 Line Item Number / Title: 6544 / Family of Construction Equipment										Aggregated Items: Family of Construction Equipment													
Items (Units in Each)							Fiscal Year 2018										Fiscal Year 2019														BALANCE		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
1) Family of Construction Equipment																																	
1.7) Airfield Damage Repair Kit - Reserves																																	
	48	2019	NAVY		1	0	1														A -	-	-	-	-	-	-	1					0
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P		

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3					P-1 Line Item Number / Title: 6544 / Family of Construction Equipment				Aggregated Items: Family of Construction Equipment			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					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	DIGITIZED SCHEMATIC SOLUTIONS LLC - Warren, MI			24	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: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property							P-1 Line Item Number / Title: 6545 / Ultra-Light Tactical Vehicle (ULTV)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	110.320	1.266	0.606	0.647	0.000	0.647	4.019	5.955	8.827	9.004	-	140.644
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	110.320	1.266	0.606	0.647	0.000	0.647	4.019	5.955	8.827	9.004	-	140.644
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	110.320	1.266	0.606	0.647	0.000	0.647	4.019	5.955	8.827	9.004	-	140.644
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Family of Internally Transportable Vehicles (FITV) are light weight and internally transportable in the V-22, CH-53D & CH53E tilt and rotary wing aircraft consisting of the Utility Task Vehicle (UTV), the future Ultra-Light Tactical Vehicle (ULTV), and the obsolete Internally Transportable Vehicle (ITV). The FITV provides deployed Marine Air-Ground Task Force (MAGTF) and Marine Expeditionary Unit (Special Operations Capable) (MEU SOC) with vehicles, which are internally transportable in selected rotary and fixed wing aircraft. The FITV expeditionary vehicles support over-the-horizon amphibious operations, irregular warfare and enhanced company operations. The vehicles are fielded to infantry and reconnaissance communities. Speed, maneuverability, and the use of cover and concealment are the crew's primary means of survival. The UTV is a part of the family of vehicles that supports the Marine Corps Operating Concept (MOC) by providing infantry and reconnaissance battalions with a reliable, easily maintained, inexpensive vehicle to support dispersed and disaggregated logistics operations while increasing unit mobility. The UTV fills a capability gap in motorized logistics sustainment, including casualty evacuation (CASEVAC) and Javelin/ ammo transport for Marine Corps infantry units. UTV's are employed by the helo companies of the MEUs and Special Purpose (SP) MAGTFs as they execute heliborne and tiltrotor operations. This commercial off the shelf (COTS) solution mitigates the infantry battalion support gap, with the ability to operate in remote, rural regions where currently fielded ground mobility platforms are unsuitable due to size, weight, and safety concerns. Based on USMC Expeditionary Fire Support System (EFSS) divestiture, the Marine Corps will divest of ITV prime mover and light strike variants and move toward modernization as Internally Transportable Vehicle (ITV) replacement alternatives are explored. Efforts will begin to replace the Utility Task Vehicles (UTV) with the Ultra-Light Tactical Vehicle (ULTV). The replacement vehicle will be multirole, supporting Reconnaissance and Infantry communities by providing a deployed SP MAGTF and Marine Expeditionary Unit (Special Operations Capable) (MEU (SOC)) with an internally transportable vehicle to support over-the-horizon amphibious operations, irregular warfare and enhanced company operations as they execute heliborne and tiltrotor operations. The ULTV will replace the UTV fleet of vehicles with greater capability and will absorb and increase its mission. Increased capabilities planned include integration of communications and GPS equipment and serve as a crew-served weapons carrier. The FITV line item will provide for the implementation of engineering change proposals, safety initiatives, and quality design resolutions to fielded UTVs. This hands-on method ensures proper in-service management and vehicle sustainment while allowing the program office to develop and implement improvements as needed to respond to evolving requirements of the Marine Corps that affect vehicle reliability, safety, availability and readiness. The last UTVs have a planned item exit date of 2022. Safety and reliability modifications are planned throughout its life to ensure maximum readiness as vehicles age.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 3: General Property						P-1 Line Item Number / Title: 6545 / Ultra-Light Tactical Vehicle (ULTV)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206623M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Family of Internally Trans Veh (ITV)				- / 110.320	- / 1.266	- / 0.606	- / 0.647	- / 0.000	- / 0.647
P-40	Total Gross/Weapon System Cost				- / 110.320	- / 1.266	- / 0.606	- / 0.647	- / 0.000	- / 0.647
*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: FY18 Base Appropriation Request: \$1.266M Funding provided product improvements to the existing UTV Fleet to address safety and reliability issues, engineering change proposals, as required, based upon feedback from the users of this COTS item in the operational environment. FY19 Base Appropriation Request: \$0.606M Funding provides product improvement to the centrally managed UTV fleet for safety and reliability issues and engineering change proposals. The funds will also support the associated update of the technical documentation upon modification of the vehicles. FY20 Base Appropriation Request: \$0.648M Funding provides for reliability engineering in support of product improvement to the UTV Fleet to address emergent fact of life reliability issues based on feedback from the operational users, such as the previously executed wheel well protection analysis and engineering change proposal that resulted in increased vehicle safety, reliability, and enhanced performance. The increase of \$0.042M is due to additional engineering change proposals required to ensure vehicle safety, reliability and enhanced performance associated with the aging UTV fleet.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3						P-1 Line Item Number / Title: 6545 / Ultra-Light Tactical Vehicle (ULTV)						Item Number / Title [DODIC]: 1 / Family of Internally Trans Veh (ITV)						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				110.320		1.266		0.606		0.647		0.000		0.647				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				110.320		1.266		0.606		0.647		0.000		0.647				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				110.320		1.266		0.606		0.647		0.000		0.647				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-				
Gross/Weapon System Unit Cost (\$ in Dollars)				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Prior years Cumulative Funding ⁽¹⁾	-	-	106.133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	106.133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	-	-	106.133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Cost																		
2.1) Prior Year Cumulative	-	-	3.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) UTV ECPs/ Modifications ⁽²⁾	-	-	-	-	-	0.144	-	-	0.340	-	-	0.647	-	-	-	-	-	0.647
2.3) UTV Technical Documentation ⁽³⁾	-	-	0.987	-	-	-	-	-	0.266	-	-	-	-	-	-	-	-	-
2.4) UTV Reliability Engineering	-	-	-	-	-	0.557	-	-	-	-	-	-	-	-	-	-	-	-
2.5) UTV Program Support	-	-	-	-	-	0.565	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	-	-	4.187	-	-	1.266	-	-	0.606	-	-	0.647	-	-	-	-	-	0.647
Gross/Weapon System Cost	-	-	110.320	-	-	1.266	-	-	0.606	-	-	0.647	-	-	0.000	-	-	0.647
Remarks:																		
[Support Cost] Funding is provided for reliability engineering in support of product improvement to the UTV Fleet to address emergent fact of life reliability issues based on feedback from the operational users, including efforts similar to previously executed road march kits, all-terrain tires and floorboard reinforcement engineering change proposals that resulted in increased vehicle safety and reliability.																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 3	P-1 Line Item Number / Title: 6545 / Ultra-Light Tactical Vehicle (ULTV)	Item Number / Title [DODIC]: 1 / Family of Internally Trans Veh (ITV)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Footnotes: (1) Prior year includes the procurement of 195 ITV Modification kits at a unit cost of \$26,210.26 each, initial Contractor Logistics Support (CLS); 248 Utility Task Vehicles (UTVs) at a unit cost of \$50,512.10 each and miscellaneous cost associated with the execution of the program requirements. (2) UTV's are deployed to the infantry battalions and the Reconnaissance units. Continuous feedback provided on these vehicles results in necessary safety modifications (3) FY19 will support the update of technical documentation associated with UTV vehicle improvements based on the modifications and engineering change proposals.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 4: Other Support						P-1 Line Item Number / Title: 6670 / 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: 0206624M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	39.672	8.477	11.608	10.956	0.000	10.956	10.948	9.518	9.732	9.933	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	39.672	8.477	11.608	10.956	0.000	10.956	10.948	9.518	9.732	9.933	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	39.672	8.477	11.608	10.956	0.000	10.956	10.948	9.518	9.732	9.933	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
This budget line item includes various procurements such as engineering efforts, engineering change proposals, modifications, and other related items less than \$5 million each.												
Corrosion Prevention and Control (CPAC) Program provides a comprehensive approach to extend the useful life on Marine Corps tactical ground and ground support equipment. The CPAC Program Office is responsible for the governance, oversight and management of both preventive and corrective corrosion control encompassing Acquisition Engineering, Material Development, Corrosion Service Teams, and Corrosion Repair Facility activities. The Consolidated CPAC Program provides a total lifecycle solution focused on Total Ownership Cost reduction and improved readiness.												
Engineer Mods and Tool Kits funds critical improvements to various pieces of equipment by enhancing their current capabilities and expanding protection from direct and indirect fire by providing specific tool kits, including the specific chest or case to store and transport the tools, to perform specific missions assigned to engineer units, such as carpentry, grubbing or clearing areas with pioneer type tools, destruction/ demolition, masonry, electrical (base camp support), plumbing, etc. including (but not limited to) Construction Shopv Kit, Pioneer Platoon Kit, Pioneer Squad Kit, Carpenter Kit, Mason Kit, and tactical weld shop upgrades.												
Marine Corps Family of Containers (MCFC) provides Marine Corps Operating Forces with a fully intermodal transport capability emphasizing dimensional standardization and International Organization for Standardization compatibility. Containers such as Pallet (PALCONS), Quadruple (QUADCONS), Quadruple with Roll-up door (QUADCON RUD) and Joint Modular Intermodal Container (JMIC) are procured. Containers will replace locally assembled prefabricated wooden mount out boxes and flat box pallets. The containers will be used to support storage and movement of organizational property and consumable supplies; provide field, garrison and shipboard warehousing; and facilitate ship-to-shore movement. The Joint Modular Intermodal Container (JMIC) provides efficient, seamless, and visible movement of supplies and unit equipment throughout the transportation and distribution systems.												
Family of Expeditionary Water Systems (FEWS) is a family of systems line that contains purification, storage, distribution, hygiene, and test systems. This capability is necessary to provide safe and potable water to Marines in expeditionary environments. The family contains individual Table of Allowance Material Control Numbers which supports MAGTF operations by providing all aspects of land-based water support to include analysis, purification, reuse, storage, transfer and dispensing. The line contains items such as the Tactical Water Purification System (TWPS), Lightweight Water Purification System (LWPS), Expeditionary Water Distribution System (EWDS), Platoon Water Purification System (PWPS), Individual Water Purification System (IWPS), Forward Area Water Point Supply System, Pump Unit Set, Containerized Batch Laundry, Shower Systems, Gray Water Recycling, as well as all the various water supply support and analysis components and equipment including Six Container (SIXCON) Pump and Tank Modules, Nozzles, Interconnection Sets, Water Packaging Components, 3k/5k/25k Tanks, Hypochlorination Units, Water Quality Analysis Sets.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 4: Other Support					P-1 Line Item Number / Title: 6670 / 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: 0206624M			
Line Item MDAP/MAIS Code: N/A										
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Navy	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	8.395	11.098	10.585	-	10.585	10.571	9.133	9.338	9.531
NR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.082	0.510	0.371	-	0.371	0.377	0.385	0.394	0.402
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	8.477	11.608	10.956	-	10.956	10.948	9.518	9.732	9.933

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 4: Other Support					P-1 Line Item Number / Title: 6670 / 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: 0206624M		
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Items Less Than \$5 Million	P-5a			- / 39.672	- / 8.477	- / 11.608	- / 10.956	- / -	- / 10.956
P-40	Total Gross/Weapon System Cost				- / 39.672	- / 8.477	- / 11.608	- / 10.956	- / 0.000	- / 10.956
*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: FY2018 Base Appropriation Request: \$8.477M (ACTIVE: \$8.395M/RESERVE \$0.082M) Corrosion Prevention and Control (CPAC) \$0.867M: Funds the procurement of equipment protective covers designed to reduce and/or eliminate the negative effects of corrosion on USMC ground tactical and support equipment, and replacement of aging covers that have exceeded their expected life cycle to prevent failure in the field. The priority will be to provide equipment covers for equipment at II MEF, MARFORRES, and MARSOC for USMC equipment placed in an administrative staging program to mitigate the negative impacts of corrosion and decrease total ownership costs. Additionally, procurement funding will be used to replace antiquated blast and painting equipment at the Corrosion Repair Facilities (CRF's) located at I MEF, II MEF, and III MEF which are managed by the consolidated CPAC program monitoring the health on 92,758 tactical ground and support equipment assets. Engineer Modification Kits (EMK) \$4.086M: Continues to fund EMK for equipment armor installations, upgrades and safety concerns to prevent deterioration in Fleet readiness for Engineer Systems inventory consisting over 47,000 end items associated to 120 TAMCNs. Funds Assault Breacher Vehicle (ABV) IA support through Toughbook procurement and refresh, modifications and upgrades to fielded legacy as well as newly fielded systems and provides quick response capability for meeting Fleet Marine Force sustainment for safety engineering, readiness, Quality Deficiency Report analysis, and legacy system modifications. Marine Corps Family of Containers (MCFC) \$1.298M: Procured Joint Modular Intermodal Containers. Funding required to meet the Approved Acquisition Objectives (AAO) outlined in the Total Force Structure Management System. Family of Expeditionary Water Systems (FEWS) \$2.226M: ACTIVE: \$2.144M/RESERVES \$0.082M: Funds procure Platoon Water Purification System and supports the procurement of a critically needed ECPs for the M80 Water Heater. FY2019 Base Appropriation Request: \$11.608M (ACTIVE: \$11.098M/RESERVE: \$0.510M) Corrosion Prevention and Control (CPAC) \$0.885M: The consolidated CPAC program currently monitors the corrosion condition of 112,672 tactical ground and support equipment assets. FY19 funding continues to procure equipment protective covers designed to reduce and/or eliminate the negative effects of corrosion on USMC ground tactical and support equipment and the replacement of aging covers that have exceeded their life expectancy. The priority will be to provide equipment covers throughout the Operating Forces for equipment placed in an administrative staging program to mitigate the negative impacts of corrosion and decrease total ownership costs. Procurement funding will also be used for the fielding and replacement of various equipment such as aging blast and painting equipment and hazardous and waste reduction equipment at the Corrosion Repair Facilities (CRFs) located at I MEF, II MEF and III MEF (Okinawa and Hawaii). Engineer Modification Kits (EMK) \$5.373M (ACTIVE: \$5.194M/RESERVE: \$0.179M): Additional funding provides upgrades to Modified-Full Width Mine Plows (M-FWMP), Deep Water Forging Kit (DWFK), FSR sustainment support and Tech Manual updates for the Assault Breacher Vehicle (ABV). Funds Improved Ribbon Bridge (IRB) Hinge modernization kit increasing the Reliability, Availability, and Maintainability (RAM) lowering future sustainment costs. Funds the Husky and Husky Mounted Detection System FSRs and the Instrument Set, Reconnaissance & Surveying Army system to maintain the Authority to Operate										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 06: Engineer and Other Equipment / BSA 4: Other Support		P-1 Line Item Number / Title: 6670 / 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: 0206624M
Line Item MDAP/MAIS Code: N/A		
and keep pace with the Army system configuration. Continues to fund EMK for equipment armor installations, upgrades and safety concerns to prevent deterioration in Fleet readiness for Engineer Systems inventory consisting of over 47,000 end items associated to 120 TAMCNs. Supports modifications and upgrades to fielded legacy as well as newly fielded systems and provides quick response capability for meeting Fleet Marine Force sustainment for safety engineering, readiness, Quality Deficiency Report analysis, and legacy system modifications.		
Marine Corps Family of Containers (MCFC) \$1.087M: Funds Joint Modular Intermodal Containers. The JMIC is a collapsible, durable, reusable, easy-to-handle, modular packaging container that can operate world-wide, carried by various modes of transportation, and is envisioned for future use as a compliment to Navy seabasing efforts for automatic loading, handling, and storage systems. The JMIC will enable Marines to fulfill their mission by giving the unit commander the flexibility to configure a mobile/deployable container as necessary to meet the specific mission of the unit. It provides the operating forces with a fully intermodal transport capability which lays flat when not in use. The JMIC also provides a more effective use of storage areas in particularly limited storage facilities. Funding is required to meet the Approved Acquisition Objective outlined in the Total Force Structure Management System.		
Family of Expeditionary Water Systems (FEWS) \$4.263M (ACTIVE: \$3.932M/RESERVES \$0.331M): Funds procure PWPS and supports the procurement of a critically needed ECP for the M80 Water Heater. The increase in funding from FY18 to FY19 \$2.329M supports procurement of PWPS and a critically needed ECP for the M80 water Heater.		
FY2020 Base Appropriation Request: \$10.956M (ACTIVE: \$10.585M/RESERVE: \$0.371M)		
Corrosion Prevention and Control (CPAC) \$0.895M: The consolidated CPAC program monitors the corrosion condition of 112,672 tactical ground and support equipment assets. FY20 funding will continue to procure equipment protective covers designed to reduce and/or eliminate the negative effects of corrosion on USMC ground tactical and support equipment and the replacement of aging covers that have exceeded their life expectancy. The priority will be to provide equipment covers throughout the Operating Forces for equipment placed in an administrative staging program to mitigate the negative impacts of corrosion and decrease total ownership costs. Procurement funding will also be used for the fielding and replacement of various equipment such as aging blast and painting equipment and hazardous waste reduction equipment at the Corrosion Repair Facilities (CRFs) located at I MEF, II MEF and III MEF (Okinawa and Hawaii).		
Engineer Modification Kits (EMK) \$3.777M: Continues to fund EMK for equipment armor installations, upgrades and safety concerns to prevent deterioration in Fleet readiness for Engineer Systems inventory consisting of over 47,000 end items associated to 120 TAMCNs. Funding provides upgrades to mine plows; FSR sustainment support and TM updates for the Assault Breacher Vehicles (ABV); and IA support through Toughbook procurement and refresh. Supports modifications and upgrades to fielded legacy as well as newly fielded systems and provides quick response capability for meeting Fleet Marine Force sustainment for safety engineering, readiness, Quality Deficiency Report analysis, and legacy system modifications. Decrease of \$1.417M from FY19 to FY20 reflects realignment (\$1.350M) from EMK to Assault Breacher Vehicle (ABV) BLI 6520 to improve accountability (\$0.067M) and reflects completion of modifications and upgrades to fielded systems.		
Marine Corps Family of Containers (MCFC) \$1.213M: Funds equipment such as Joint Modular Intermodal Containers. The JMIC is a collapsible, durable, reusable, easy-to-handle, modular packaging container that can operate world-wide, carried by various modes of transportation, and is envisioned for future use as a compliment to Navy seabasing efforts for automatic loading, handling, and storage systems. The JMIC will enable Marines to fulfill their mission by giving the unit commander the flexibility to configure a mobile/deployable container as necessary to meet the specific mission of the unit. It provides the operating forces with a fully intermodal transport capability which lays flat when not in use. The JMIC also provides a more effective use of storage areas in particularly limited storage facilities. Funding is required to meet the Approved Acquisition Objective outlined in the Total Force Structure Management System. The increase in funding of \$0.126M from FY19 to FY20 supports the plan to procure increased quantity of JMICs to meet AAO.		
Family of Expeditionary Water Systems (FEWS) \$5.071M (ACTIVE: \$4.700M/RESERVES \$0.371M): Funds will procure Platoon Water Purification System (PWPS). The increase in funding from FY19 to FY20 \$0.808M supports procurement Platoon Water Purification System (PWPS) program of record.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 4									P-1 Line Item Number / Title: 6670 / Items Less Than \$5 Million							Aggregated Items Title: Items Less Than \$5 Million					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 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) Items Less Than \$5 Million																					
1.1) Prior Years Cumulative Funding	A		-	-	7.071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 1) Items Less Than \$5 Million			-	-	7.071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2) Corrosion Prevention and Control (420114)																					
2.1) Corrosion Prevention and Control Equipment (420114)	A		-	-	3.146	-	-	0.867	-	-	0.885	-	-	0.895	-	-	-	-	-	0.895	
Subtotal: 2) Corrosion Prevention and Control (420114)			-	-	3.146	-	-	0.867	-	-	0.885	-	-	0.895	-	-	-	-	-	0.895	
3) Marine Corps Family of Containers (438098)																					
3.1) Joint Modular Intermodal Containers (JMIC) - Active ^{(1)(†)}	A		2,075.00	40	0.083	2,098.00	455	0.955	2,136.36	508	1.085	2,139.11	567	1.213	-	-	-	2,139.11	567	1.213	
3.2) JMIC (Joint Modular Intermodal Containers) ACTIVE ^{(2)(†)}	A		-	-	-	2,132.00	161	0.343	-	-	-	-	-	-	-	-	-	-	-		
3.3) Integrated Logistics Support (MCFE)	A		-	-	0.012	-	-	-	-	-	0.002	-	-	-	-	-	-	-	-		
3.4) Prior Years Cumulative Funding	A		-	-	0.669	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Subtotal: 3) Marine Corps Family of Containers (438098)			-	-	0.764	-	-	1.298	-	-	1.087	-	-	1.213	-	-	-	-	-	1.213	
4) Family of Expeditionary Water Systems (260412)																					
4.1) FEWS Individual Water Purification Systems (Active)	B		-	-	1.161	-	-	0.280	-	-	-	-	-	-	-	-	-	-	-		
4.2) FEWS Platoon Water Purification Systems (Active) ^{(3)(†)}	B		-	-	-	-	-	0.299	23,536.14	14	0.330	23,536.14	166	3.907	-	-	-	23,536.14	166	3.907	
4.3) Platoon Water Purification System Product Verification Testing ⁽⁴⁾	A		-	-	-	-	-	-	-	-	1.947	-	-	-	-	-	-	-	-		
4.5) FEWS Water Supply Support Components/ Equipment (Active)	A		-	-	-	-	-	1.369	-	-	1.580	-	-	-	-	-	-	-	-		
4.6) FEWS Integrated Logistics Support (Active)	A		-	-	-	-	-	0.196	-	-	0.075	-	-	0.793	-	-	-	-	0.793		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 4								P-1 Line Item Number / Title: 6670 / Items Less Than \$5 Million							Aggregated Items Title: Items Less Than \$5 Million				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.7) FEWS Water Supply Support Components/ Equipment (Reserves)	A		-	-	-	-	-	0.082	-	-	0.331	-	-	0.371	-	-	-	-	-	0.371
Subtotal: 4) Family of Expeditionary Water Systems (260412)			-	-	1.161	-	-	2.226	-	-	4.263	-	-	5.071	-	-	-	-	-	5.071
5) Engineer Modification Kits (268098)																				
5.1) Engineer Equipment Modifications	A		-	-	26.661	-	-	4.086	-	-	5.194	-	-	3.777	-	-	-	-	-	3.777
5.2) Engineer Equipment Modification (Reserves)	A		-	-	0.869	-	-	-	-	-	0.179	-	-	-	-	-	-	-	-	-
Subtotal: 5) Engineer Modification Kits (268098)			-	-	27.530	-	-	4.086	-	-	5.373	-	-	3.777	-	-	-	-	-	3.777
Total			-	-	39.672	-	-	8.477	-	-	11.608	-	-	10.956	-	-	-	-	-	10.956

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

(†) indicates the presence of a P-5a

Footnotes:

(1) -FY18 PMC Active JMIC Quantity decreased by 163 due to step ladder pricing and cost difference associated with it as a result of being incrementally funded. Another cost element added to reflect pricing for quantities less than 300 each. -FY17 PMC Active JMIC Quantity increased by 3 each (Increase from 37 to 40) due to funding movement from Reserves 0502514M) to active (0206315M) and funding not required for Integrated Logistics Support. FY18 PMC slight pricing change due to quantity greater than 300 each (Contract Tier Pricing). -FY17 PMC Active JMIC Quantity increased by 6 each(Increase from 31 to 37) due to available funding not required for Integrated Logistics Support. -FY17 PMC Active supported remaining QuadCon RUD procurement. JMIC Active quantity decreased from 79 to 31; JMIC Procurement quantity increases with FY17 Reserves. Reference JMIC-Reserves Cost Element for FY17. -JMIC Contract Modification resulted in slight pricing change in FY17 and FY18. -FY18 through FY22; funds moved from Reserves (0502514M) to Active (0206315M). -FY16 and prior year funds reside in BLI 6543.

(2) -FY18 Funding: Due to step ladder pricing; prices increase for quantities less than 300 each. Receipt of incremental funding resulted in quantities less than 300.

(3) FY18 funds were delayed for PWPS due to a 6+ month slip in the Request For Proposal Release which reduced planned production quantities to Product Verification Test quantities. Full Rate Production starts FY19. The RFP was released and PWPS is currently in Source Selection Testing with a contract award scheduled for 3QFY19. FY19 funding is for (14) Limited Production quantities to use for Product Verification Testing. FY20 funding is for (166) Production quantities.

(4) FY19 funds will be used to refurbish PWPS Product Verification Test equipment for fielding as well as Product Verification Testing costs at numerous DoD test facilities.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 06 / 4				P-1 Line Item Number / Title: 6670 / Items Less Than \$5 Million					Aggregated Items: Items Less Than \$5 Million			
Item Number / Title [DODIC]	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
3) Marine Corps Family of Containers (438098)												
3.1) Joint Modular Intermodal Containers (JMIC) - Active ⁽¹⁾		2017	Garrett Container Systems, Inc. / Accident, MD	C / FFP	MCSC Quantico, VA	Jan 2017	Mar 2017	40	2,087.00	N	Jan 2017	
3.1) Joint Modular Intermodal Containers (JMIC) - Active ⁽¹⁾		2018	Garrett Container Systems, Inc. / Accident, MD	C / FFP	MCSC Quantico, VA	Jan 2018	Mar 2018	455	2,098.00	N	Jan 2017	
3.1) Joint Modular Intermodal Containers (JMIC) - Active ⁽¹⁾		2019	Garrett Container Systems, Inc. / Accident, MD	C / FFP	MCSC Quantico, VA	Nov 2018	Jan 2019	508	2,136.36	N	Jan 2017	
3.1) Joint Modular Intermodal Containers (JMIC) - Active ⁽¹⁾		2020	Garrett Container Systems, Inc. / Accident, MD	C / TBD	MCSC Quantico, VA	Jan 2020	Mar 2020	567	2,139.11	N		
3.2) JMIC (Joint Modular Intermodal Containers) ACTIVE ⁽²⁾		2018	Garrett Container Systems, Inc. / Accident, MD	C / FFP	MCSC Quantico, VA	Jan 2018	Mar 2018	161	2,132.00	N	Jan 2017	
4) Family of Expeditionary Water Systems (260412)												
4.2) FEWS Platoon Water Purification Systems (Active) ⁽³⁾		2019	TBD / TBD	C / TBD	MCSC Quantico, VA	Jul 2019	Jul 2019	14	23,536.14	Y		Aug 2018

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 07: Spares and Repair Parts / BSA 1: Spares And Repair Parts							P-1 Line Item Number / Title: 7000 / Spares and Repair Parts					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0206211M, 0206625M, 0204460M, 0206313M, 0206315M, 0305239M, 0502511M				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	29.109	24.397	33.470	0.000	33.470	33.586	39.369	45.366	46.381	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	29.109	24.397	33.470	0.000	33.470	33.586	39.369	45.366	46.381	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	29.109	24.397	33.470	0.000	33.470	33.586	39.369	45.366	46.381	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Spares - Funds are required to reimburse the Navy Working Capital Fund for both repairable and consumable components at the time the initial spare parts package is released with the principal end item (PEI) to the Fleet Marine Force. This concept complies with the Navy Working Capital Fund funding of Initial Spares with reimbursement from the Procurement Account. Funds also provide for direct vendor support of the PEI delivery to the Fleet Marine Force.												
This account has funding for the following programs:												
Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T), Tactical Remote Sensor System (TRSS), Intelligence Analysis System (IAS), Terrestrial Collection, LAV-Anti Tank System Program, LAV Reset Program, M1A1 Modification, Family of Material Handling Equipment (FMHE), Ground/Air Task Oriented Radar (G/ATOR AN/TPS-80), RQ-21A Small Tactical UAS, General Purpose Tool and Test Systems (GPTTS), Amphibious Combat Vehicle Increment 1.1 (ACV 1.1), and Training Simulation Support (TSS)/Training Devices.												
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024		
Navy	Quantity	-	-	-	-	-	-	-	-	-		
	Total Obligation Authority	28.747	24.397	33.470	-	33.470	33.586	39.369	45.366	46.381		
NR	Quantity	-	-	-	-	-	-	-	-	-		
	Total Obligation Authority	0.362	-	-	-	-	-	-	-	-		
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-		
	Total Obligation Authority	29.109	24.397	33.470	-	33.470	33.586	39.369	45.366	46.381		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 07: Spares and Repair Parts / BSA 1: Spares And Repair Parts						P-1 Line Item Number / Title: 7000 / Spares and Repair Parts				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0206211M, 0206625M, 0204460M, 0206313M, 0206315M, 0305239M, 0502511M				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-18	PMC spares				- / -	- / 29.109	- / 24.397	- / 33.470	- / -	- / 33.470
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 29.109	- / 24.397	- / 33.470	- / 0.000	- / 33.470
Title represents the P-18 Title for Spares.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2018 Base Appropriation Request: \$29.109M (\$28.747M Active; \$0.362M Reserve) ACV 1.1 BLI 2025: \$5.569M procured initial spares for communication suites, Driver's Vision Enhancer, Exportable Power, Joint Battle Command-Platform (JBC-P), and Amphibious Remote Weapon Stations (ARWS). M1A1 Modification Kits BLI 2061: Reserve \$0.362M procured the remaining reserve spares for the Abrams Integrated Display and Targeting System (AIDATS). General Purpose Tool and Test Equipment BLI 4181: \$0.173M supported reimbursement to the working capital funds for spares acquired and needed during test support. SMART-T BLI 4633: \$0.205M provided direct vendor support of the principal end item (PEI) components that reduced repair time and equipment downtime. AN/TPS-80 Ground Air Task Oriented Radar (G/ATOR) BLI 4655: \$11.417M procured spares for the Gallium Nitride (GaN) LRIP systems. RQ-21 UAS BLI 4737: \$11.027M procured initial spares for 4 RQ-21A systems as well as support sparing for deployments in that year. TRSS BLI 4747: \$0.356M purchased equipment spares in the TRSS System of Systems (SoS) that minimized repair time and equipment unavailability. FY 2019 Base Appropriation Request: \$24.397M ACV 1.1 BLI 2025: \$6.145M provides for initial spares for communication suites, Driver's Vision Enhancer, Exportable Power, Joint Battle Command-Platform (JBC-P), and Amphibious Remote Weapon Stations (ARWS). Initial spares for ACV 1.1 are procured commensurate with the end items they support based on lead time for procurement. LAV Reset BLI 2038: \$5.735M procures spares for direct vendor support required for the fielding of the Reset kits on the Light Armored Vehicle. General Purpose Tool and Test Equipment BLI 4181: \$0.174M funding supports reimbursement to the working capital funds for spares acquired and needed during test support. SMART-T BLI 4633: \$0.207M provides funds for the direct vendor support of the principal end item (PEI) components to reduce repair time and equipment downtime for the Warfighter. AN/TPS-80 Ground Air Task Oriented Radar (G/ATOR) BLI 4655: \$11.611M provides spares funding to support Gallium Nitride (GaN) LRIP systems procured in FY18. FY19 Spares funding is required to procure the initial provisioning package to primarily support those GaN LRIP systems being procured in FY18 and fielded in FY20, as over 90 percent of the G/ATOR spares have a lead time exceeding 12										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 07: Spares and Repair Parts / BSA 1: Spares And Repair Parts		P-1 Line Item Number / Title: 7000 / Spares and Repair Parts
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206211M, 0206625M, 0204460M, 0206313M, 0206315M, 0305239M, 0502511M
Line Item MDAP/MAIS Code: N/A		
months. The spares funding increases (\$0.194M) from FY18 to FY19 supporting the fielding of four (4) new systems in FY20 for a total of thirteen (13) G/ATOR systems fielded through FY20. Adequate sparing is necessary so Marine Operational Forces will have the necessary repair parts to operate and maintain newly fielded G/ATOR Radar Systems and to avoid a significant risk of not meeting the program's important Key Performance Parameter (KPP) 8; Sustainment. IAS BLI 4747: \$0.160M of spares funding provides for direct vendor support of the principal end item (PEI) components delivery to the Fleet Marine Force. Terrestrial Collection BLI 4747: \$0.261M provides for purchase of equipment spares necessary to keep ground-based imagery collection and dissemination assets and sensor systems in operation, ensuring spares are available to the warfighter when breakage occurs to minimize equipment down-time. Training Simulation Support (TSS)/Training Devices BLI 6532: \$0.051M funds procurement of low density, minor (low cost) MAGTF ground training equipment, simulators and simulations to include devices such as medical training kits, climbing walls, weapons models and mockups that enhance basic occupational and combat skills across the wide spectrum of tactics, techniques, procedures and proficiency. Family of Material Handling Equipment (FMHE) BLI 6544: \$0.053M provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps MHE such as forklifts, cranes, and container handlers. This budget line item also includes funding for equipment such as the Light Capability Rough Terrain Forklift (LCRTF), Hydraulic Excavator (HYEX), Extendable Boom Forklift Modernization (EBFL-M), Rough Terrain Container Handler (RTCH) SLEP and the Tractor, Rubber Tires, and Articulated Steering, Multiple Purpose (TRAM) SLEP. FY 2020 Base Appropriation Request: \$33.470M The funding increase of \$9.073M from FY19 to FY20 is primarily due to the ACV 1.1 Spares increase of \$7.809M, which is a direct result of the increase in ACV vehicles and GFE being procured in BLI 2025 in FY20. ACV 1.1 BLI 2025: \$13.954M will provide for initial spares for communication suites, Driver's Vision Enhancer, Exportable Power, Joint Battle Command-Platform (JBC-P), and Amphibious Remote Weapon Stations (ARWS). Initial spares for ACV 1.1 are procured commensurate with the end items they support based on lead time for procurement. The increase of \$7.809M between FY 2019 and FY 2020 is attributed to increased quantity of ACV vehicles in FY 2020 and government furnished equipment (GFE) in support of Full Rate Production. LAV Reset Program BLI 2038: \$5.883M funding will provide spares for direct vendor support required for the fielding of the Reset kits on the Light Armored Vehicle. General Purpose Tool and Test Equipment BLI 4181: \$0.178M funding will procure equipment spares for newly fielded mechanical test equipment, electrical test equipment, and tool sets and kits. Funding ensures critical spares are available to the warfighter when breakage occurs to minimize equipment down time. AN/TPS-80 Ground Air Task Oriented Radar (G/ATOR) BLI 4655: \$13.235M provides spares funding to support the Lot One Full Rate Production (FRP) systems procured in FY19. FY20 spares funding is required to procure the initial provisioning package (IPP) which consists of over one hundred assemblies/parts with over 60 critical items to include Five-Axis Motor Controllers and Dual Leaf Assemblies. Funding will primarily support the Lot One FRP systems being procured in FY19 and fielded in FY21, as over 90 percent of the G/ATOR spares have a lead time exceeding 12 months. Thus, the FY20 spares funding will obligate in FY20 and begin to deliver Spares in FY21 to align with end item systems deliveries. The spares funding increase (\$1.624M) from FY19 to FY20 supports the fielding of six (6) new systems beginning in FY21 for a total of nineteen (19) G/ATOR systems fielded through CY21. The funding in FY20 is also required for the decentralized distribution of initial spares from LOGCOM to the Repair Inventory Points at each Marine Expeditionary Force, as required. Adequate sparing is necessary so Marine Operational Forces will have the necessary repair parts to operate and maintain newly fielded G/ATOR Radar Systems and to avoid placing the program at significant risk of not meeting its important Key Performance Parameter (KPP) 8 of Sustainment. Intelligence Analysis System (IAS) BLI 4767: \$0.166M of spares funding will provide for direct vendor support of the principal end item (PEI) components delivery to the Fleet Marine Force.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1109N: Procurement, Marine Corps / BA 07: Spares and Repair Parts / BSA 1: Spares And Repair Parts		P-1 Line Item Number / Title: 7000 / Spares and Repair Parts
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0206211M, 0206625M, 0204460M, 0206313M, 0206315M, 0305239M, 0502511M
Line Item MDAP/MAIS Code: N/A		
Family of Material Handling Equipment (FMHE) BLI 6544: \$0.054M provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps MHE such as forklifts, cranes, and container handlers. This budget line item also includes funding for equipment such as the Light Capability Rough Terrain Forklift (LCRTF), Hydraulic Excavator (HYEX), Extendable Boom Forklift Modernization (EBFL-M), Rough Terrain Container Handler (RTCH) SLEP and the Tractor, Rubber Tires, and Articulated Steering, Multiple Purpose (TRAM) SLEP.		

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Exhibit P-18, Initial and Replenishment Spare and Repair Parts Justification: PB 2020 Navy					Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1109N / 07 / 1		P-1 Line Item Number / Title: 7000 / Spares and Repair Parts			Title: PMC spares	
End Item Line Item Number / Name [MDAP/MAIS]	Prior Years (\$ M)	FY 2018 (\$ M)	FY 2019 (\$ M)	FY 2020 Base (\$ M)	FY 2020 OCO (\$ M)	FY 2020 Total (\$ M)
Initial						
BA 02 - Weapons and combat vehicles						
2025 / Amphibious Combat Vehicle 1.1	-	5.569	6.145	13.954	-	13.954
2038 / LAV PIP	-	-	5.735	5.883	-	5.883
2061 / Modification Kits	-	0.362	-	0.000	-	0.000
BA 04 - Communications and Electronics Equipment						
4181 / Repair and Test Equipment	-	0.173	0.174	0.178	-	0.178
4633 / Radio Systems	-	0.205	0.207	0.000	-	0.000
4655 / Ground/Air Task Oriented Radar (G/ATOR)	-	11.417	11.611	13.235	-	13.235
4737 / RQ-21 UAS	-	11.027	-	0.000	-	0.000
4747 / Intelligence Support Equipment	-	0.356	0.421	0.000	-	0.000
4767 / Distributed Common Ground System (DCGS-MC)	-	-	-	0.166	-	0.166
BA 06 - Engineer and Other Equipment						
6532 / Training Devices	-	-	0.051	0.000	-	0.000
6544 / Family of Construction Equipment	-	-	0.053	0.054	-	0.054
Subtotal: Initial	-	29.109	24.397	33.470	-	33.470
Total Cost (Initial + Replenishment)	-	29.109	24.397	33.470	-	33.470

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