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

March 2019



Army

Justification Book of

Aircraft Procurement, Army

FY2020 Aircraft Procurement, Army

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Army • Budget Estimates FY 2020 • Procurement

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Cost Statement

The following Justification Books were prepared at a cost of \$366,803.08: Aircraft (ACFT), Missile (MSLS), Weapons & Tracked Combat Vehicles (WTCV), Ammunition (AMMO), Other Procurement Army (OPA) 1 - Tactical & Support Vehicles, Other Procurement Army (OPA) 2 – Communications & Electronics, Other Procurement Army (OPA) 3 & 4 - Other Support Equipment & Spares, Research, Development, Test and Evaluation (RDTE) for: Budget Activity 1, Budget Activity 2, Budget Activity 3, Budget Activity 4, Budget Activity 5A, Budget Activity 5B, Budget Activity 6, and Budget Activity 7.

AIRCRAFT PROCUREMENT, ARMY

Appropriation Language

For construction, procurement, modification, and modernization of aircraft equipment, including ordnance, spare parts, accessories therefore; specialized equipment; expansion of public and private plants, including the land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, \$3,696,429,000 Base and \$381,541,000 OCO to remain available for obligations until September 30, 2022.

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

- OCO for Direct War Costs (\$381,531,000): 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 (\$10,000) OCO for Enduring Requirements are enduring in-theater and in-CONUS costs that will likely remain after combat operations cease, and have previously been funded in OCO.

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

11 Feb 2019

<u>Appropriation</u>	<u>FY 2018 (Base + OCO)</u>	<u>FY 2019 Base Enacted</u>	<u>FY 2019 OCO Enacted</u>	<u>FY 2019 Total Enacted</u>
Aircraft Procurement, Army	5,983,531	4,299,566	346,963	4,646,529
Total Department of the Army	5,983,531	4,299,566	346,963	4,646,529

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Department of the Army
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<u>Appropriation</u>	<u>FY 2020 Base</u>	<u>FY 2020 OCO for Base Requirements</u>	<u>FY 2020 OCO for Direct War and Enduring Costs</u>	<u>FY 2020 Total OCO</u>
Aircraft Procurement, Army	3,696,429		381,541	381,541
Total Department of the Army	3,696,429		381,541	381,541

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Total Obligational Authority
(Dollars in Thousands)

11 Feb 2019

<u>Appropriation</u>	<u>FY 2020 Total (Base + OCO)</u>
Aircraft Procurement, Army	4,077,970
Total Department of the Army	4,077,970

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

11 Feb 2019

Appropriation: Aircraft Procurement, Army

<u>Budget Activity</u>	<u>FY 2018 (Base + OCO)</u>	<u>FY 2019 Base Enacted</u>	<u>FY 2019 OCO Enacted</u>	<u>FY 2019 Total Enacted</u>
01. Aircraft	4,187,108	3,153,390	101,246	3,254,636
02. Modification of Aircraft	1,255,685	900,798	137,270	1,038,068
04. Support Equipment and Facilities	540,738	245,378	108,447	353,825
Total Aircraft Procurement, Army	5,983,531	4,299,566	346,963	4,646,529

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11 Feb 2019

Appropriation: Aircraft Procurement, Army

Budget Activity	FY 2020 Base	FY 2020 OCO for Base Requirements	FY 2020 OCO for Direct War and Enduring Costs	FY 2020 Total OCO
01. Aircraft	2,868,207		79,000	79,000
02. Modification of Aircraft	480,168		161,012	161,012
04. Support Equipment and Facilities	348,054		141,529	141,529
Total Aircraft Procurement, Army	3,696,429		381,541	381,541

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11 Feb 2019

Appropriation: Aircraft Procurement, Army

Budget Activity -----	FY 2020 Total (Base + OCO) -----
01. Aircraft	2,947,207
02. Modification of Aircraft	641,180
04. Support Equipment and Facilities	489,583
Total Aircraft Procurement, Army	4,077,970

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Department of the Army
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Appropriation: 2031A Aircraft Procurement, Army

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO)		FY 2019 Base Enacted		FY 2019 OCO Enacted		FY 2019 Total Enacted		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
<u>Budget Activity 01: Aircraft</u>											
Fixed Wing											
1	Saturn Arch (MIP)	A		40,000							U
2	Utility F/W Aircraft		3	75,115	2	18,644			2	18,644	U
3	MQ-1 UAV	A	20	224,506	4	103,326	6	60,000	10	163,326	U
4	RQ-11 (RAVEN)	A			458	46,416			458	46,416	U
Rotary											
5	Tactical Unmanned Aircraft System (TUAS)	A									U
6	Spectrum Army Video	A		3,907							U
7	Helicopter, Light Utility (LUH)	A	23	198,383	4	34,000			4	34,000	U
8	AH-64 Apache Block IIIA Reman Less: Advance Procurement (PY)	A	48	(919,576) (-185,160)	48	(924,158) (-170,910)			48	(924,158) (-170,910)	U
				734,416		753,248				753,248	
9	AH-64 Apache Block IIIA Reman Advance Procurement (CY)			170,910		174,550				174,550	U
	C (FY 2018 for FY 2019) (M)			(170,910)							
	C (FY 2019 for FY 2020) (M)					(174,550)				(174,550)	
	C (FY 2020 for FY 2021) (M)										

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Appropriation: 2031A Aircraft Procurement, Army

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	
<u>Budget Activity 01: Aircraft</u>											
Fixed Wing											
1	Saturn Arch (MIP)	A									U
2	Utility F/W Aircraft		1	16,000							U
3	MQ-1 UAV	A					6	54,000	6	54,000	U
4	RQ-11 (RAVEN)	A		23,510							U
Rotary											
5	Tactical Unmanned Aircraft System (TUAS)	A		12,100							U
6	Spectrum Army Video	A									U
7	Helicopter, Light Utility (LUH)	A									U
8	AH-64 Apache Block IIIA Reman Less: Advance Procurement (PY)	A	48	(981,399) (-174,550)							U
				806,849							
9	AH-64 Apache Block IIIA Reman Advance Procurement (CY)			190,870							U
	C (FY 2018 for FY 2019) (M)										
	C (FY 2019 for FY 2020) (M)										
	C (FY 2020 for FY 2021) (M)			(190,870)							

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Appropriation: 2031A Aircraft Procurement, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c
			Quantity	Cost	
<u>Budget Activity 01: Aircraft</u>					
Fixed Wing					
1	Saturn Arch (MIP)	A			U
2	Utility F/W Aircraft		1	16,000	U
3	MQ-1 UAV	A	6	54,000	U
4	RQ-11 (RAVEN)	A		23,510	U
Rotary					
5	Tactical Unmanned Aircraft System (TUAS)	A		12,100	U
6	Spectrum Army Video	A			U
7	Helicopter, Light Utility (LUH)	A			U
8	AH-64 Apache Block IIIA Reman	A	48	(981,399)	U
	Less: Advance Procurement (PY)			(-174,550)	U
				<u>806,849</u>	
9	AH-64 Apache Block IIIA Reman				
	Advance Procurement (CY)			190,870	U
	C (FY 2018 for FY 2019) (M)				
	C (FY 2019 for FY 2020) (M)				
	C (FY 2020 for FY 2021) (M)			(190,870)	

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Appropriation: 2031A Aircraft Procurement, Army

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO)		FY 2019 Base Enacted		FY 2019 OCO Enacted		FY 2019 Total Enacted		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
10	AH-64 Apache Block IIIB New Build	A	31	(1,023,200)	18	(524,587)			18	(524,587)	U
	Less: Advance Procurement (PY)			(-71,800)		(-71,900)				(-71,900)	U
				951,400		452,687				452,687	
11	AH-64 Apache Block IIIB New Build										
	Advance Procurement (CY)			71,900		58,600				58,600	U
	C (FY 2018 for FY 2019) (M)			(71,900)							
	C (FY 2019 for FY 2020) (M)					(58,600)				(58,600)	
12	UH-60 Blackhawk M Model (MYP)		57	(1,254,529)	57	(1,218,162)	1	(21,246)	58	(1,239,408)	U
	Less: Advance Procurement (PY)			(-172,486)		(-80,587)				(-80,587)	U
				1,082,043		1,137,575		21,246		1,158,821	
13	UH-60 Blackhawk M Model (MYP)										
	Advance Procurement (CY)			86,295		106,150				106,150	U
	C (FY 2018 for FY 2019) (M)			(79,434)							
	C (FY 2018 for FY 2020) (M)			(5,092)							
	C (FY 2018 for FY 2021) (M)			(1,769)							
	C (FY 2019 for FY 2020) (M)					(106,150)				(106,150)	
	C (FY 2020 for FY 2021) (M)										
14	UH-60 Black Hawk L and V Models	A	35	76,516	18	148,138			18	148,138	U
15	CH-47 Helicopter	A	14	(447,683)	6	(117,098)	1	(20,000)	7	(137,098)	U
	Less: Advance Procurement (PY)			(-8,707)		(-17,820)				(-17,820)	U
				438,976		99,278		20,000		119,278	
16	CH-47 Helicopter										
	Advance Procurement (CY)			17,820		20,778				20,778	U
	C (FY 2018 for FY 2019) (M)			(17,820)							
	C (FY 2019 for FY 2020) (M)					(20,778)				(20,778)	
	C (FY 2020 for FY 2021) (M)										
17	Spectrum Army SUAS	A		14,921							U
Total Aircraft				4,187,108		3,153,390		101,246		3,254,636	

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Appropriation: 2031A Aircraft Procurement, Army

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	
10	AH-64 Apache Block IIIB New Build Less: Advance Procurement (PY)	A		(58,600) (-58,600)							U U
11	AH-64 Apache Block IIIB New Build Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2019 for FY 2020) (M)										U
12	UH-60 Blackhawk M Model (MYP) Less: Advance Procurement (PY)		73	(1,523,103) (-111,563)							U U
				1,411,540							
13	UH-60 Blackhawk M Model (MYP) Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2018 for FY 2020) (M) C (FY 2018 for FY 2021) (M) C (FY 2019 for FY 2020) (M) C (FY 2020 for FY 2021) (M)			79,572 (79,572)							U
14	UH-60 Black Hawk L and V Models	A	25	169,290							U
15	CH-47 Helicopter Less: Advance Procurement (PY)	A	8	(161,068) (-20,778)			(25,000)		(25,000)		U U
				140,290			25,000		25,000		
16	CH-47 Helicopter Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2019 for FY 2020) (M) C (FY 2020 for FY 2021) (M)			18,186 (18,186)							U
17	Spectrum Army SUAS	A									U
Total Aircraft				2,868,207			79,000		79,000		

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Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c
			Quantity	Cost	
10	AH-64 Apache Block IIIB New Build	A		(58,600)	U
	Less: Advance Procurement (PY)			(-58,600)	U
11	AH-64 Apache Block IIIB New Build Advance Procurement (CY)				U
	C (FY 2018 for FY 2019) (M)				
	C (FY 2019 for FY 2020) (M)				
12	UH-60 Blackhawk M Model (MYP)		73	(1,523,103)	U
	Less: Advance Procurement (PY)			(-111,563)	U
				1,411,540	
13	UH-60 Blackhawk M Model (MYP) Advance Procurement (CY)			79,572	U
	C (FY 2018 for FY 2019) (M)				
	C (FY 2018 for FY 2020) (M)				
	C (FY 2018 for FY 2021) (M)				
	C (FY 2019 for FY 2020) (M)				
	C (FY 2020 for FY 2021) (M)			(79,572)	
14	UH-60 Black Hawk L and V Models	A	25	169,290	U
15	CH-47 Helicopter	A	8	(186,068)	U
	Less: Advance Procurement (PY)			(-20,778)	U
				165,290	
16	CH-47 Helicopter Advance Procurement (CY)			18,186	U
	C (FY 2018 for FY 2019) (M)				
	C (FY 2019 for FY 2020) (M)				
	C (FY 2020 for FY 2021) (M)			(18,186)	
17	Spectrum Army SUAS	A			U
Total Aircraft				2,947,207	

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Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO)		FY 2019 Base Enacted		FY 2019 OCO Enacted		FY 2019 Total Enacted		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 02: Modification of Aircraft											
Modification of Aircraft											
18	MQ-1 Payload (MIP)	A		70,510							U
19	Universal Ground Control Equipment (UAS)	A		15,000		27,114				27,114	U
20	Gray Eagle Mods2	A		74,291		97,781		32,000		129,781	U
21	Multi Sensor ABN Recon (MIP)			106,775		66,274		51,000		117,274	U
22	AH-64 Mods	A		238,141		104,996				104,996	U
23	CH-47 Cargo Helicopter Mods (MYP)			22,366		27,807				27,807	U
24	GRCS SEMA Mods (MIP)	A		5,514		5,573				5,573	U
25	ARL SEMA Mods (MIP)	A		11,650		7,522				7,522	U
26	EMARSS SEMA Mods (MIP)	A		51,279		60,248				60,248	U
27	Utility/Cargo Airplane Mods			57,737		17,719				17,719	U
28	Utility Helicopter Mods			50,709		32,443				32,443	U
29	Network and Mission Plan	A		132,402		118,614				118,614	U
30	Comms, Nav Surveillance	A		162,639		156,969				156,969	U
31	Degraded Visual Environment	A				30,000				30,000	U
32	GATM Rollup	A		37,403		26,848				26,848	U
33	RQ-7 UAV MODS	A		193,160		103,246		50,868		154,114	U

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Appropriation: 2031A Aircraft Procurement, Army

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	
Budget Activity 02: Modification of Aircraft											

Modification of Aircraft											
18	MQ-1 Payload (MIP)	A									U
19	Universal Ground Control Equipment (UAS)	A		2,090							U
20	Gray Eagle Mods2	A		14,699							U
21	Multi Sensor ABN Recon (MIP)			35,189			80,260		80,260		U
22	AH-64 Mods	A		58,172							U
23	CH-47 Cargo Helicopter Mods (MYP)			11,785							U
24	GRCS SEMA Mods (MIP)	A		5,677			750		750		U
25	ARL SEMA Mods (MIP)	A		6,566							U
26	EMARSS SEMA Mods (MIP)	A		3,859			22,180		22,180		U
27	Utility/Cargo Airplane Mods			15,476			8,362		8,362		U
28	Utility Helicopter Mods			6,744							U
29	Network and Mission Plan	A		105,442			10		10		U
30	Comms, Nav Surveillance	A		164,315							U
31	Degraded Visual Environment	A					49,450		49,450		U
32	GATM Rollup	A		30,966							U
33	RQ-7 UAV MODS	A		8,983							U

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Appropriation: 2031A Aircraft Procurement, Army

Line No	Item Nomenclature	Ident Code	FY 2020		S e c -
			(Base + OCO) Quantity	Cost	
<u>Budget Activity 02: Modification of Aircraft</u>					
Modification of Aircraft					
18	MQ-1 Payload (MIP)	A			U
19	Universal Ground Control Equipment (UAS)	A		2,090	U
20	Gray Eagle Mods2	A		14,699	U
21	Multi Sensor ABN Recon (MIP)			115,449	U
22	AH-64 Mods	A		58,172	U
23	CH-47 Cargo Helicopter Mods (MYP)			11,785	U
24	GRCS SEMA Mods (MIP)	A		6,427	U
25	ARL SEMA Mods (MIP)	A		6,566	U
26	EMARSS SEMA Mods (MIP)	A		26,039	U
27	Utility/Cargo Airplane Mods			23,838	U
28	Utility Helicopter Mods			6,744	U
29	Network and Mission Plan	A		105,452	U
30	Comms, Nav Surveillance	A		164,315	U
31	Degraded Visual Environment	A		49,450	U
32	GATM Rollup	A		30,966	U
33	RQ-7 UAV MODS	A		8,983	U

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Appropriation: 2031A Aircraft Procurement, Army

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO)		FY 2019 Base Enacted		FY 2019 OCO Enacted		FY 2019 Total Enacted		S e c	
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost		
34	UAS MODS	A		26,109		17,644		3,402		21,046	U	
Total Modification of Aircraft				1,255,685		900,798		137,270		1,038,068		
Budget Activity 04: Support Equipment and Facilities												
Ground Support Avionics												
35	Aircraft Survivability Equipment			66,804		57,170				57,170	U	
36	Survivability CM			5,884		5,853				5,853	U	
37	CMWS	A		197,467		13,496		84,387		97,883	U	
38	Common Infrared Countermeasures (CIRCM)	A		80,677		36,839		24,060		60,899	U	
Other Support												
39	Avionics Support Equipment			7,038		1,778				1,778	U	
40	Common Ground Equipment			47,404		34,818				34,818	U	
41	Aircrew Integrated Systems			53,366		27,243				27,243	U	
42	Air Traffic Control			78,790		63,872				63,872	U	
43	Industrial Facilities			1,397		1,417				1,417	U	
44	Launcher, 2.75 Rocket			1,911		1,901				1,901	U	
45	Launcher Guided Missile: Longbow Hellfire XM2	A				7	991			7	991	U
Total Support Equipment and Facilities				540,738		245,378		108,447		353,825		
Total Aircraft Procurement, Army				5,983,531		4,299,566		346,963		4,646,529		

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Appropriation: 2031A Aircraft Procurement, Army

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	
34	UAS MODS	A		10,205							U
Total Modification of Aircraft				480,168				161,012		161,012	
Budget Activity 04: Support Equipment and Facilities											
Ground Support Avionics											
35	Aircraft Survivability Equipment			52,297							U
36	Survivability CM			8,388							U
37	CMWS	A		13,999				130,219		130,219	U
38	Common Infrared Countermeasures (CIRCM)	A		168,784				9,310		9,310	U
Other Support											
39	Avionics Support Equipment			1,777							U
40	Common Ground Equipment			18,624							U
41	Aircrew Integrated Systems			48,255							U
42	Air Traffic Control			32,738							U
43	Industrial Facilities										U
44	Launcher, 2.75 Rocket			2,201							U
45	Launcher Guided Missile: Longbow Hellfire XM2	A	9	991			12	2,000	12	2,000	U
Total Support Equipment and Facilities				348,054				141,529		141,529	
Total Aircraft Procurement, Army				3,696,429				381,541		381,541	

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Appropriation: 2031A Aircraft Procurement, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO)		S e c
			Quantity	Cost	
34	UAS MODS	A		10,205	U
Total Modification of Aircraft				641,180	
Budget Activity 04: Support Equipment and Facilities					
Ground Support Avionics					
35	Aircraft Survivability Equipment			52,297	U
36	Survivability CM			8,388	U
37	CMWS	A		144,218	U
38	Common Infrared Countermeasures (CIRCM)	A		178,094	U
Other Support					
39	Avionics Support Equipment			1,777	U
40	Common Ground Equipment			18,624	U
41	Aircrew Integrated Systems			48,255	U
42	Air Traffic Control			32,738	U
43	Industrial Facilities				U
44	Launcher, 2.75 Rocket			2,201	U
45	Launcher Guided Missile: Longbow Hellfire XM2	A	21	2,991	U
Total Support Equipment and Facilities				489,583	
Total Aircraft Procurement, Army				4,077,970	

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2	01	10	9440A11300	Utility F/W Aircraft.....	2
3	01	10	9670A00005	MQ-1 UAV.....	6
4	01	10	9675A00010	RQ-11 (RAVEN).....	20
5	01	20	0013A01310	Tactical Unmanned Aircraft System (TUAS).....	28
6	01	20	3167A09999	Spectrum Army Video.....	34
7	01	20	4742A05001	Helicopter, Light Utility (LUH).....	35
8	01	20	5757A05111	AH-64 Apache Block IIIA Reman.....	37
9	01	20	5757A05111	AH-64 Apache Block IIIA Reman, Advance Procurement.....	47
10	01	20	5840A05133	AH-64 Apache Block IIIB New Build.....	51
11	01	20	5840A05133	AH-64 Apache Block IIIB New Build, Advance Procurement.....	62
12	01	20	6771AA0005	UH-60 Blackhawk M Model (MYP).....	66
13	01	20	6771AA0005	UH-60 Blackhawk M Model (MYP), Advance Procurement.....	70
14	01	20	6773A05009	UH-60 Black Hawk L and V Models.....	74
15	01	20	6775A05101	CH-47 Helicopter.....	80
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19	02	10	0028A02706	Universal Ground Control Equipment (UAS).....	98
20	02	10	0756AA6601	Gray Eagle Mods2.....	100
21	02	10	1036AZ2001	Multi Sensor ABN Recon (MIP).....	110
22	02	10	2706AA6605	AH-64 MODS.....	131
23	02	10	3264AA0252	CH-47 Cargo Helicopter Mods (MYP).....	144
24	02	10	3403A02111	GRCS SEMA Mods (MIP).....	162
25	02	10	3404A02110	ARL SEMA Mods (MIP).....	167
26	02	10	3405A02112	EMARSS SEMA Mods (MIP).....	173
27	02	10	4194AA0270	Utility/Cargo Airplane Mods.....	179
28	02	10	6949AA0480	Utility Helicopter Mods.....	184
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31	02	10	8660A00713	Degraded Visual Environment.....	234
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33	02	10	9555A00018	RQ-7 UAV MODS.....	254
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36	04	10	5044AZ3507	Survivability CM.....	284
37	04	10	5397AZ3517	CMWS.....	289
38	04	10	5399AZ3537	Common Infrared Countermeasures (CIRCM).....	300
39	04	30	0832AZ3000	Avionics Support Equipment.....	310
40	04	30	5212AZ3100	Common Ground Equipment.....	311
41	04	30	6380AZ3110	Aircrew Integrated Systems.....	315
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AH-64 Apache Block IIIB New Build	5840A05133	10	01	20.....	51
AH-64 Apache Block IIIB New Build, Advance Procurement	5840A05133	11	01	20.....	62
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ARL SEMA Mods (MIP)	3404A02110	25	02	10.....	167
Air Traffic Control	6818AA0050	42	04	30.....	324
Aircraft Survivability Equipment	3632AZ3504	35	04	10.....	275
Aircrew Integrated Systems	6380AZ3110	41	04	30.....	315
Avionics Support Equipment	0832AZ3000	39	04	30.....	310
CH-47 Cargo Helicopter Mods (MYP)	3264AA0252	23	02	10.....	144
CH-47 Helicopter	6775A05101	15	01	20.....	80
CH-47 Helicopter, Advance Procurement	6775A05101	16	01	20.....	91
CMWS	5397AZ3517	37	04	10.....	289
Common Ground Equipment	5212AZ3100	40	04	30.....	311
Common Infrared Countermeasures (CIRCM)	5399AZ3537	38	04	10.....	300
Comms, Nav Surveillance	8659AA0723	30	02	10.....	214

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EMARSS SEMA Mods (MIP)	3405A02112	26	02	10.....	173
GATM Rollup	8859AA0711	32	02	10.....	239
GRCS SEMA Mods (MIP)	3403A02111	24	02	10.....	162
Gray Eagle Mods2	0756AA6601	20	02	10.....	100
Helicopter, Light Utility (LUH)	4742A05001	7	01	20.....	35
Industrial Facilities	8132AZ3300	43	04	30.....	329
Launcher Guided Missile: Longbow Hellfire XM299	9157J01200	45	04	30.....	333
Launcher, 2.75 Rocket	9154A50100	44	04	30.....	331
MQ-1 Payload (MIP)	0023A01001	18	02	10.....	96
MQ-1 UAV	9670A00005	3	01	10.....	6
Multi Sensor ABN Recon (MIP)	1036AZ2001	21	02	10.....	110
Network And Mission Plan	8658AA0712	29	02	10.....	203
RQ-11 (RAVEN)	9675A00010	4	01	10.....	20
RQ-7 UAV MODS	9555A00018	33	02	10.....	254
SATURN ARCH (MIP)	1301A11301	1	01	10.....	1
Spectrum Army SUAS	9990A19900	17	01	20.....	95
Spectrum Army Video	3167A09999	6	01	20.....	34
Survivability CM	5044AZ3507	36	04	10.....	284
Tactical Unmanned Aircraft System (TUAS)	0013A01310	5	01	20.....	28

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Line Item Title	Line Item Number	Line #	BA	BSA	Page
UAS MODS	9556A01002	34	02	10.....	270
UH-60 Black Hawk L and V Models	6773A05009	14	01	20.....	74
UH-60 Blackhawk M Model (MYP)	6771AA0005	12	01	20.....	66
UH-60 Blackhawk M Model (MYP), Advance Procurement	6771AA0005	13	01	20.....	70
Universal Ground Control Equipment (UAS)	0028A02706	19	02	10.....	98
Utility F/W Aircraft	9440A11300	2	01	10.....	2
Utility Helicopter Mods	6949AA0480	28	02	10.....	184
Utility/Cargo Airplane Mods	4194AA0270	27	02	10.....	179

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 1301A11301 / SATURN ARCH (MIP)

ID Code (A=Service Ready, B=Not Service Ready): **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>)	152.699	40.000	-	-	-	-	-	-	-	-	-	192.699
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	152.699	40.000	-	-	-	-	-	-	-	-	-	192.699
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	152.699	40.000	-	-	-	-	-	-	-	-	-	192.699

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Saturn Arch aircraft are Airborne Intelligence, Surveillance and Reconnaissance (AISR) aircraft that support a suite of imaging sensors designed to provide persistent surveillance to accomplish day and night image collection and exploitation of Improvised Explosive Devices (IEDs) in designated Named Areas of Interest (NAIs).

The Saturn Arch systems are under the control of operational commanders within USCENTCOM.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	40.000	-	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	40.000	-	-	-	-	-	-	-	-

Justification:

FY 18 OCO procurement dollars of \$40.000 million supports the procurement of one (1) De Havilland -8 315 series commercial aircraft, Mission Equipment Package (MEP) and the MEP to aircraft integration in support of JUONS CC-0541.
All COMPO 1 Active

"In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 9440A11300 / Utility F/W Aircraft

ID Code (A=Service Ready, B=Not Service Ready): **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>)	37	3	2	1	-	1	-	-	-	-	-	43
Gross/Weapon System Cost (<i>\$ in Millions</i>)	335.197	75.115	18.644	16.000	-	16.000	-	-	-	-	-	444.956
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	335.197	75.115	18.644	16.000	-	16.000	-	-	-	-	-	444.956
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	335.197	75.115	18.644	16.000	-	16.000	-	-	-	-	-	444.956

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	9,059.378	25,038.333	9,322.000	16,000.000	-	16,000.000	-	-	-	-	-	10,347.814

Description:

The budget line funds the acquisition of Army Fixed Wing Aircraft in support of mission requirements, training, and other support activities. Fixed Wing Aircraft will be capable of self-deploying over extended ranges; provide CONUS/OCONUS time sensitive movement of key personnel and equipment; support to homeland defense/security operations; support to civil and military authorities. This budget line also provides for the acquisition of new commercial-off-the-shelf (COTS), modified COTS, and non-developmental Fixed Wing Aircraft systems including used aircraft systems.

Average unit cost is variable and dependent upon aircraft selection and requirements.

FY18 Aircraft Procurement - Army (APA) funding was used to procure one (1) Army Golden Knights Parachute Team C-147A aircraft and spares. Program office is prepared to release a Request for Project Proposal (RPP) for at least two (2) FUA to be procured through Other Transaction Agreement (OTA) award in 3QFY19. Expect Army decision by 3QFY19 to proceed with release of RPP.

Congressional Mark Added in FY19 in the amount of \$17.900 million to this line for Enhanced Medium Altitude Reconnaissance and Surveillance System ELINT (EMARSS-E). Expect OTA Award by 3QFY19.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	3	2	1	-	1	-	-	-	-
	Total Obligation Authority	75.115	18.644	16.000	-	16.000	-	-	-	-
Total: Secondary Distribution	Quantity	3	2	1	-	1	-	-	-	-
	Total Obligation Authority	75.115	18.644	16.000	-	16.000	-	-	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 9440A11300 / Utility F/W Aircraft

ID Code (A=Service Ready, B=Not Service Ready): **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	A11300 / Utility F/W Aircraft				37 / 335.197	3 / 75.115	2 / 18.644	1 / 16.000	- / -	1 / 16.000
P-40	Total Gross/Weapon System Cost				37 / 335.197	3 / 75.115	2 / 18.644	1 / 16.000	- / -	1 / 16.000

*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 2020 Base procurement dollars in the amount of \$16.000 million will support Fixed Wing Aircraft, spares procurement, Engineering Change Proposals (ECPs) and PM cost.

This funding line has been used for the procurement of multiple aircraft and does not have a single Army Acquisition Objective (AAO). Average unit cost is variable and dependent upon aircraft selection and requirements. This funding line has been used to procure multiple aircraft types both new and used.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2020 Army					Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10			P-1 Line Item Number / Title: 9440A11300 / Utility F/W Aircraft			Item Number / Title [DODIC]: A11300 / Utility F/W Aircraft				
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)			37	3	2	1	-	1		
Gross/Weapon System Cost (\$ in Millions)			335.197	75.115	18.644	16.000	-	16.000		
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-		
Net Procurement (P-1) (\$ in Millions)			335.197	75.115	18.644	16.000	-	16.000		
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-		
Total Obligation Authority (\$ in Millions)			335.197	75.115	18.644	16.000	-	16.000		
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>										
Initial Spares (\$ in Millions)			-	-	-	-	-	-		
Gross/Weapon System Unit Cost (\$ in Thousands)			9,059.378	25,038.333	9,322.000	16,000.000	-	16,000.000		

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																		
Aircraft Procurement/Modification	6,996.622	37	258.875	13,157.500	4	52.630	8,950.000	2	17.900	13,689.000	1	13.689	-	-	-	13,689.000	1	13.689
Engineering Changes	-	-	3.271	-	-	0.197	-	-	-	-	-	0.119	-	-	-	-	-	0.119
Initial Spares	-	-	14.845	-	-	2.872	-	-	-	-	-	0.125	-	-	-	-	-	0.125
Systems Test and Evaluation	-	-	2.832	-	-	3.527	-	-	-	-	-	0.151	-	-	-	-	-	0.151
Integration Engineering	-	-	5.958	-	-	5.095	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	<i>-</i>	<i>-</i>	<i>285.781</i>	<i>-</i>	<i>-</i>	<i>64.321</i>	<i>-</i>	<i>-</i>	<i>17.900</i>	<i>-</i>	<i>-</i>	<i>14.084</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>14.084</i>
<i>Subtotal: Flyaway Cost</i>	<i>-</i>	<i>-</i>	<i>285.781</i>	<i>-</i>	<i>-</i>	<i>64.321</i>	<i>-</i>	<i>-</i>	<i>17.900</i>	<i>-</i>	<i>-</i>	<i>14.084</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>14.084</i>
Support - Common Support Equipment Cost																		
Test and Measurement Equipment	-	-	0.432	-	-	0.381	-	-	-	-	-	0.396	-	-	-	-	-	0.396
<i>Subtotal: Support - Common Support Equipment Cost</i>	<i>-</i>	<i>-</i>	<i>0.432</i>	<i>-</i>	<i>-</i>	<i>0.381</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.396</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.396</i>
Support - Data Cost																		
Support Data Data	-	-	8.003	-	-	2.060	-	-	-	-	-	0.080	-	-	-	-	-	0.080
<i>Subtotal: Support - Data Cost</i>	<i>-</i>	<i>-</i>	<i>8.003</i>	<i>-</i>	<i>-</i>	<i>2.060</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.080</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.080</i>
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	2.946	-	-	-	-	-	-	-	-	0.080	-	-	-	-	-	0.080

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Exhibit P-5, Cost Analysis: PB 2020 Army												Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10						P-1 Line Item Number / Title: 9440A11300 / Utility F/W Aircraft						Item Number / Title [DODIC]: A11300 / Utility F/W Aircraft					
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)
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	2.946	-	-	-	-	-	-	-	-	0.080	-	-	-	-	-	0.080
Support - Program Management Cost																		
Government Management	-	-	36.071	-	-	8.353	-	-	0.744	-	-	1.360	-	-	-	-	-	1.360
<i>Subtotal: Support - Program Management Cost</i>	-	-	36.071	-	-	8.353	-	-	0.744	-	-	1.360	-	-	-	-	-	1.360
Support - Training Cost																		
Services	-	-	1.964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Training Cost</i>	-	-	1.964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	9,059.378	37	335.197	25,038.333	3	75.115	9,322.000	2	18.644	16,000.000	1	16.000	-	-	-	16,000.000	1	16.000

Remarks:

This funding line has been used for the procurement of multiple aircraft and does not have a single Army Acquisition Objective (AAO). Average unit cost is variable and dependent upon aircraft selection and requirements. This funding line has been used to procure multiple aircraft types both new and used.

FY18 Aircraft Procurement Army (APA) funding was used to procure one (1) Army Golden Knights Parachute Team C-147A aircraft and spares. Program office is prepared to release a Request for Project Proposal (RPP) for at least two (2) Fixed Wing Utility Aircraft (FUA) to be procured through Other Transaction Agreement (OTA) award in 3QFY19. Expect Army decision by 3QFY19 to proceed with release of RPP.

Congressional Mark Added in FY19 in the amount of \$17.900 million to this line for Enhanced Medium Altitude Reconnaissance and Surveillance System ELINT (EMARSS-E). Expect OTA Award by 3QFY19.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	3	2	1	-	1
	Total Obligation Authority	75.115	18.644	16.000	-	16.000
Total: Secondary Distribution	Quantity	3	2	1	-	1
	Total Obligation Authority	75.115	18.644	16.000	-	16.000

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 9670A00005 / MQ-1 UAV

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0305204A, 0305219A

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>)	191	20	10	-	6	6	6	-	-	-	-	233
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,279.645	224.506	163.326	-	54.000	54.000	54.000	-	-	-	-	3,775.477
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,279.645	224.506	163.326	-	54.000	54.000	54.000	-	-	-	-	3,775.477
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,279.645	224.506	163.326	-	54.000	54.000	54.000	-	-	-	-	3,775.477

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	17,170.916	11,225.300	16,332.600	-	9,000.000	9,000.000	9,000.000	-	-	-	-	16,203.764

Description:

The MQ-1C Gray Eagle provides reconnaissance, surveillance, intelligence, target acquisition, communications relay, electronic warfare, attack, battle damage assessment, manned-unmanned teaming capabilities and command and control missions providing dedicated mission configured Unmanned Aircraft System (UAS) support to assigned and other Army/Joint Force units based upon commander's priorities. The MQ-1C Gray Eagle is a dedicated, multi-mission UAS fielded to 11 Army Combat Aviation Brigades (CAB), two (2) Army Intelligence and Security Command (INSCOM) units, and two (2) Army Special Operations Command (USASOC) units.

The MQ-1C Gray Eagle system consists of 12 Aircraft, 12 Satellite Communication (SATCOM) Air Data Terminals (SADT), six (6) Universal Ground Control Stations (UGCS), seven (7) Universal Ground Data Terminals (UGDT), three (3) Satellite Ground Data Terminals (SGDT), one (1) Mobile Ground Control Station (MGCS), three (3) Automatic Take-Off & Landing System's (ATLS), standard equipment package, Ground Based Sense And Avoid (GBSAA), and payloads to include; Electro-Optical/Infrared Laser Range Finder/Laser Designator (EO/IR/LD HD), Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI), communication relay, and Government Furnished Equipment.

4 May 2017, the Army approved an Army Acquisition Objective (AAO) adjustment to bring the total requirement to 204 MQ-1C Gray Eagle aircraft.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	20	10	0	6	6	6	-	-	-
	Total Obligation Authority	224.506	163.326	0.000	54.000	54.000	54.000	-	-	-
Total: Secondary Distribution	Quantity	20	10	0	6	6	6	-	-	-
	Total Obligation Authority	224.506	163.326	-	54.000	54.000	54.000	-	-	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 9670A00005 / MQ-1 UAV

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0305204A, 0305219A

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 <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>
P-5	A00005 / MQ-1 UAV	P-5a, P-21	A		191 / 3,279.645	20 / 224.506	10 / 163.326	- / -	6 / 54.000	6 / 54.000
P-40	Total Gross/Weapon System Cost				191 / 3,279.645	20 / 224.506	10 / 163.326	- / -	6 / 54.000	6 / 54.000

*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 \$54.000 million FY 2020 OCO funding supports the procurement of six (6) MQ-1C Gray Eagle Extended Range War Replacement Aircraft (WRA).

 "In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV	Item Number / Title [DODIC]: A00005 / MQ-1 UAV

ID Code (A=Service Ready, B=Not Service Ready) : A	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>)	191	20	10	-	6	6
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,279.645	224.506	163.326	-	54.000	54.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,279.645	224.506	163.326	-	54.000	54.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,279.645	224.506	163.326	-	54.000	54.000

(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>)	17,170.916	11,225.300	16,332.600	-	9,000.000	9,000.000

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																		
Aircraft ^(†)	5,252.574	190	997.989	7,992.400	20	159.848	7,233.800	10	72.338	-	-	-	7,487.833	6	44.927	7,487.833	6	44.927
SATCOM Airborne Data Terminal (SADT)	777.963	190	147.813	656.500	20	13.130	670.900	10	6.709	-	-	-	590.500	6	3.543	590.500	6	3.543
Aircraft Container	385.115	26	10.013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universal Ground Control Station (UGCS)	3,779.519	54	204.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mobile GCS (MGCS)	1,360.000	19	25.840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universal Ground Data Terminal (UGDT)	1,412.754	57	80.527	1,398.000	2	2.796	-	-	-	-	-	-	-	-	-	-	-	-
Universal Satellite Ground Data Terminal (USGDT)	1,575.000	3	4.725	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Government Furnished Equipment (GFE)	-	-	60.427	-	-	10.549	-	-	5.390	-	-	-	-	-	3.300	-	-	3.300
Ground Base Sense and Avoid (GBSAA)	-	-	68.014	-	-	0.500	-	-	-	-	-	-	-	-	-	-	-	-
Ground Control Station (GCS)	3,172.000	10	31.720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portable Ground Control Station	776.000	10	7.760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Satellite Ground Data Terminal (SGDT)	1,911.094	32	61.155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Army												Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10						P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV						Item Number / Title [DODIC]: A00005 / MQ-1 UAV					
ID Code (A=Service Ready, B=Not Service Ready) : A												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)
Ground Data Terminal (GDT)	1,229.071	14	17.207	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portable Ground Data Terminal (PGDT)	379.000	4	1.516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Automatic Take-Off & Landing Sys (ATLS)	1,024.879	33	33.821	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tower Trailers	200.000	84	16.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardware-Retrofit Platoon Configuration	-	-	104.316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1,873.737	-	-	186.823	-	-	84.437	-	-	0.000	-	-	51.770	-	-	51.770
<i>Subtotal: Flyaway Cost</i>	-	-	1,873.737	-	-	186.823	-	-	84.437	-	-	0.000	-	-	51.770	-	-	51.770
Hardware Cost																		
Recurring Cost																		
Common Sensor Payload (CSP) HD	-	-	-	1,900.000	9	17.100	1,900.000	4	7.600	-	-	-	-	-	-	-	-	-
Aircraft - Service Life Extension Program (SLEP)	-	-	-	-	-	-	-	-	60.000	-	-	-	-	-	-	-	-	-
Ground Support Equipment (GSE)	2,438.000	21	51.198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial Spares	10,093.375	24	242.241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Data (Fielding Manuals)	-	-	5.312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Beam Shelter	-	-	6.403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Modifications	-	-	36.455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Safety Item	-	-	0.093	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	341.702	-	-	17.100	-	-	67.600	-	-	-	-	-	-	-	-	-
Non Recurring Cost																		
MQ-1C Gray Eagle Extended Range / Non-Recurring	-	-	66.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Recurring Production	-	-	20.587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hunter Non Program of Record (PoR) CSD-HD Payloads (NRE)	-	-	15.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	101.587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	443.289	-	-	17.100	-	-	67.600	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Army												Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10						P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV						Item Number / Title [DODIC]: A00005 / MQ-1 UAV					
ID Code (A=Service Ready, B=Not Service Ready) : A												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)
Software Cost																		
Recurring Cost																		
Software Modifications	-	-	33.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	33.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Software Cost</i>	-	-	33.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Package Fielding Cost																		
Recurring Cost																		
First Destination Transportation	-	-	3.648	-	-	0.439	-	-	0.095	-	-	-	-	-	-	-	-	-
New Equipment Training (NET)	-	-	97.719	-	-	12.714	-	-	4.984	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	101.367	-	-	13.153	-	-	5.079	-	-	-	-	-	-	-	-	-
Non Recurring Cost																		
Training Devices	-	-	81.332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interim Contractor Logistics Support	-	-	42.307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Universal Mission Simulators Spares	-	-	7.325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	130.964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Package Fielding Cost</i>	-	-	232.331	-	-	13.153	-	-	5.079	-	-	-	-	-	-	-	-	-
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	242.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	242.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Peculiar Support Equipment Cost																		
Support and Handling Equipment	-	-	8.556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Peculiar Support Equipment Cost</i>	-	-	8.556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Program Management Cost																		
Contractor Management	-	-	254.480	-	-	7.430	-	-	6.210	-	-	-	-	-	2.230	-	-	2.230
<i>Subtotal: Support - Program Management Cost</i>	-	-	254.480	-	-	7.430	-	-	6.210	-	-	0.000	-	-	2.230	-	-	2.230
Support - System Engineering Cost																		
System Engineering	-	-	64.590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10		P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV
ID Code (A=Service Ready, B=Not Service Ready) : A		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)
<i>Subtotal: Support - System Engineering Cost</i>	-	-	64.590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - System Technical Support (STS) Cost																		
System Technical Support (STS)	-	-	80.420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - System Technical Support (STS) Cost</i>	-	-	80.420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - System Test and Evaluation Cost																		
Test and Evaluation Support	-	-	46.288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	46.288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	17,170.916	191	3,279.645	11,225.300	20	224.506	16,332.600	10	163.326	-	-	-	9,000.000	6	54.000	9,000.000	6	54.000

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	20	10	0	6	6
	Total Obligation Authority	224.506	163.326	0.000	54.000	54.000
Total:	Quantity	20	10	-	6	6
Secondary Distribution	Total Obligation Authority	224.506	163.326	-	54.000	54.000

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10			P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV				Item Number / Title [DODIC]: A00005 / MQ-1 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 (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Aircraft ^(†)		2011	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FPIF	AMCOM	Apr 2011	Mar 2013	29	4,046.000	Y	Dec 2010	Dec 2010
Aircraft ^(†)		2012	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FPIF	AMCOM	Jul 2012	May 2014	29	4,206.000	Y	Dec 2011	Dec 2011
Aircraft ^(†)		2013	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Sep 2013	May 2015	19	5,130.733	Y	May 2012	May 2012
Aircraft ^(†)		2014	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Mar 2015	Nov 2016	23	4,705.870	Y	Nov 2013	Nov 2013
Aircraft ^(†)		2015	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Jun 2015	Dec 2017	19	6,742.158	Y	Mar 2015	Mar 2015
Aircraft ^(†)		2016	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Dec 2016	Nov 2018	20	6,796.800	Y	Dec 2015	Dec 2015
Aircraft ^(†)		2017	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Sep 2017	Jul 2019	26	6,931.460	Y	Mar 2018	Sep 2017
Aircraft ^(†)		2018	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Apr 2019	Feb 2021	20	7,992.400	Y	Oct 2018	Jul 2018
Aircraft ^(†)		2019	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Oct 2019	Aug 2021	10	7,233.800	Y	Oct 2018	Jul 2018
Aircraft ^(†)	✓	2020	GENERAL ATOMICS / ASI / SAN DIEGO	SS / FFP	AMCOM	Apr 2020	Mar 2022	6	7,487.833	N	Sep 2018	Sep 2018

(†) indicates the presence of a P-21

Remarks:

FY2012 LRIP III delivery schedule is for 12 months and one (1) day.
 FY2013 MQ-1C Gray Eagle exercised the option for four (4) aircraft, and four (4) SATCOM Air Data Terminals (SADT) with FY14 APA funds.
 FY2014 FRP II delivery schedule included an option for four (4) aircraft. The option exercised approximately three (3) months after base contract award therefore extending the delivery schedule.
 FY2015 FRP III delivery schedule is for the procurement of 19 aircraft and associated equipment.
 FY2016 FRP IV delivery schedule is for the procurement of 20 aircraft and associated equipment.
 FY2019 procurement quantity is for 10 MQ-1C Gray Eagle Extended Range aircraft and funding for the MQ-1C Gray Eagle Service Life Extension Program.
 Additional Justification and Authority (J&A) approval required to procure one (1) FY2019 Aircraft and six (6) FY2020 Aircraft.
 Additional Justification and Authority (J&A) approval required to procure War Replacement Aircraft, six (6) FY2021 Aircraft, six (6) Aircraft FY2022, and six (6) Aircraft FY2023.

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10 **P-1 Line Item Number / Title:** 9670A00005 / MQ-1 UAV **Item Number / Title [DODIC]:** A00005 / MQ-1 UAV

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2013													Fiscal Year 2014													BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	Calendar Year 2013													Calendar Year 2014													
							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			
Aircraft																																	
Prior Years Deliveries: 25																																	
	1	2011	ARMY	29	0	29	-	-	-	-	-	1	4	-	2	2	3	2	6	1	2	2	-	2	2				0				
	1	2012	ARMY	29	0	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	2	2	-			
	1	2013	ARMY	19	0	19												A	-	-	-	-	-	-	-	-	-	-	19				
	1	2014	ARMY	23	0	23																							23				
	1	2015	ARMY	19	0	19																							19				
	1	2016	ARMY	20	0	20																							20				
	1	2017	ARMY	26	0	26																							26				
	1	2018	ARMY	20	0	20																							20				
	1	2019	ARMY	10	0	10																							10				
✓	1	2020	ARMY	6	0	6																							6				
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10 **P-1 Line Item Number / Title:** 9670A00005 / MQ-1 UAV **Item Number / Title [DODIC]:** A00005 / MQ-1 UAV

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2015													Fiscal Year 2016													BALANCE	
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			
Aircraft																																	
Prior Years Deliveries: 25																																	
	1	2011	ARMY	29	29	0																							0				
	1	2012	ARMY	29	7	22	7	4	2	1	2	2	3	1															0				
	1	2013	ARMY	19	0	19	-	-	-	-	-	-	-	1	3	1	-	2	1	-	-	1	3	-	-	2	3	-	1	1	0		
	1	2014	ARMY	23	0	23						A	-	-	-														23				
	1	2015	ARMY	19	0	19									A	-	-	-	-	-	-	-	-	-	-	-	-	-	19				
	1	2016	ARMY	20	0	20																							20				
	1	2017	ARMY	26	0	26																							26				
	1	2018	ARMY	20	0	20																							20				
	1	2019	ARMY	10	0	10																							10				
✓	1	2020	ARMY	6	0	6																							6				
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10 **P-1 Line Item Number / Title:** 9670A00005 / MQ-1 UAV **Item Number / Title [DODIC]:** A00005 / MQ-1 UAV

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2017														Fiscal Year 2018														BALANCE	
O C C #	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					
Aircraft																																			
Prior Years Deliveries: 25																																			
	1	2011	ARMY	29	29	0																													0
	1	2012	ARMY	29	29	0																													0
	1	2013	ARMY	19	19	0																													0
	1	2014	ARMY	23	0	23	-	3	1	1	1	2	3	-	4	-	1	1	3	3															0
	1	2015	ARMY	19	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	5	3	-	4	3					
	1	2016	ARMY	20	0	20																													20
	1	2017	ARMY	26	0	26																													26
	1	2018	ARMY	20	0	20																													20
	1	2019	ARMY	10	0	10																													10
✓	1	2020	ARMY	6	0	6																													6
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV	Item Number / Title [DODIC]: A00005 / MQ-1 UAV
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2019												Fiscal Year 2020												BALANCE	
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
Aircraft																															
Prior Years Deliveries: 25																															
	1	2011	ARMY	29	29	0																							0		
	1	2012	ARMY	29	29	0																							0		
	1	2013	ARMY	19	19	0																							0		
	1	2014	ARMY	23	23	0																							0		
	1	2015	ARMY	19	16	3		3																					0		
	1	2016	ARMY	20	0	20		-	2	1	1	2	2	4	4	4													0		
	1	2017	ARMY	26	0	26		-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	0		
	1	2018	ARMY	20	0	20								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		
	1	2019	ARMY	10	0	10												A	-	-	-	-	-	-	-	-	-	-	10		
✓	1	2020	ARMY	6	0	6																				A	-	-	6		
								O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
								C	O	E	A	E	A	A	A	U	U	U	E	C	O	V	E	A	E	A	A	U	U	A	S
								T	V	C	N	B	R	P	Y	N	L	G	P	T	V	C	N	B	R	P	Y	N	L	A	S

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10 **P-1 Line Item Number / Title:** 9670A00005 / MQ-1 UAV **Item Number / Title [DODIC]:** A00005 / MQ-1 UAV

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2021													Fiscal Year 2022													BALANCE	
O 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			
Aircraft																																	
Prior Years Deliveries: 25																																	
	1	2011	ARMY	29	29	0																						0					
	1	2012	ARMY	29	29	0																						0					
	1	2013	ARMY	19	19	0																						0					
	1	2014	ARMY	23	23	0																						0					
	1	2015	ARMY	19	19	0																						0					
	1	2016	ARMY	20	20	0																						0					
	1	2017	ARMY	26	26	0																						0					
	1	2018	ARMY	20	0	20	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2					0					
	1	2019	ARMY	10	0	10	-	-	-	-	-	-	-	-	-	2	2	2	2	2								0					
✓	1	2020	ARMY	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	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 Army	Date: March 2019
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Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9670A00005 / MQ-1 UAV	Item Number / Title [DODIC]: A00005 / MQ-1 UAV
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			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 ATOMICS / ASI - SAN DIEGO	2	2	6	4	4	23	27	4	4	22	26

Remarks:
 FY2012 LRIP III delivery schedule is for 12 months and one (1) day.
 FY2013 MQ-1C Gray Eagle exercised the option for four (4) aircraft, and four (4) SATCOM Air Data Terminals (SADT) with FY14 APA funds.
 FY2014 FRP II delivery schedule included an option for four (4) aircraft. The option exercised approximately three (3) months after base contract award therefore extending the delivery schedule.
 FY2015 FRP III delivery schedule is for the procurement of 19 aircraft and associated equipment.
 FY2016 FRP IV delivery schedule is for the procurement of 20 aircraft and associated equipment.
 FY2019 procurement quantity is for 10 MQ-1C Gray Eagle Extended Range aircraft and funding for the MQ-1C Gray Eagle Service Life Extension Program.
 Additional Justification and Authority (J&A) approval required to procure one (1) FY2019 Aircraft and six (6) FY2020 Aircraft.
 Additional Justification and Authority (J&A) approval required to procure War Replacement Aircraft, six (6) FY2021 Aircraft, six (6) Aircraft FY2022, and six (6) Aircraft FY2023.

"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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 9675A00010 / RQ-11 (RAVEN)

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

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>)	253.122	-	46.416	23.510	-	23.510	30.948	33.831	10.041	16.988	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	253.122	-	46.416	23.510	-	23.510	30.948	33.831	10.041	16.988	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	253.122	-	46.416	23.510	-	23.510	30.948	33.831	10.041	16.988	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	101.345	49.495	-	49.495	49.517	49.388	50.205	70.490	Continuing	Continuing

Description:

The Rucksack Portable Unmanned Aircraft System (RPUAS) Family of Small Unmanned Aircraft Systems (FoSUAS) provides the battalion and below ground maneuver elements with an organic, on-demand, asset to develop situational awareness, enhance force protection, and secure routes, points, and areas. The system provides the small unit commander an organic and responsive reconnaissance and targeting capability with real-time Full Motion Video and sensor data. The RPUAS FoSUAS includes a combination of three separate hand-launched mission specific configurable aircraft that do not require an improved launch/recovery. The three separate mission specific configurable (Unmanned Aircraft) UA are the Short Range Reconnaissance (SRR) (formerly the Short Range Micro (SRM)), the Medium Range Reconnaissance (MRR), and the Long Range Reconnaissance (LRR). Funding in FY19 is for 200 Raven Systems, Initial Spares Packages, training, fielding, and Program Support for the Security Force Assistance Brigades (SFAB). FY19 also supports 258 Short Range Reconnaissance (SSR) air vehicles, Initial Spares Packages, training, fielding, and Program Support.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	39.922	23.510	-	23.510	10.448	6.467	-	13.472
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	6.494	-	-	-	20.500	27.364	10.041	3.516
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	46.416	23.510	-	23.510	30.948	33.831	10.041	16.988

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 10: Fixed Wing **P-1 Line Item Number / Title:** 9675A00010 / RQ-11 (RAVEN)

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

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	A00010 / RQ-11 (RAVEN)	P-5a, P-21			- / 253.122	- / -	- / 46.416	- / 23.510	- / -	- / 23.510
P-40	Total Gross/Weapon System Cost				- / 253.122	- / -	- / 46.416	- / 23.510	- / -	- / 23.510

*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:
 Justification: FY2020 Base procurement dollars in the amount of \$23.510 million supports procurement of 475 Short Range Reconnaissance (SRR) air vehicles. Remaining funding is for initial spares packages, training, fielding, technical and program support.

Note: P-1 FY2019 quantity is in error. P-40 FY2019 quantity justification is correct.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9675A00010 / RQ-11 (RAVEN)	Item Number / Title [DODIC]: A00010 / RQ-11 (RAVEN)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	253.122	-	46.416	23.510	-	23.510
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	253.122	-	46.416	23.510	-	23.510
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	253.122	-	46.416	23.510	-	23.510

(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)	-	-	101.345	49.495	-	49.495

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																		
RQ-11 B Raven Air Vehicle, GCS/RVT, EO	9.856	6,525	64.309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RQ-11B Raven Initial Spares Package (ISP)	2.525	6,525	16.477	-	-	-	-	-	8.316	-	-	-	-	-	-	-	-	-
RQ-11B Raven Operator Training	-	-	17.051	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-
RQ-11B Other System Hardware	-	-	22.271	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RQ-11B Digital Data Link Retrofit	41.665	1,318	54.914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RQ-11B Gimbal Payload Retrofit	33.690	1,128	38.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RQ-11B Government Furnished Equipment (GFE)	-	-	6.825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RQ-11B Other Government Agencies/ Core	-	-	12.457	-	-	-	-	-	0.250	-	-	-	-	-	-	-	-	-
RQ-11B Technical	-	-	10.836	-	-	-	-	-	0.300	-	-	-	-	-	-	-	-	-
RQ-11B Logistics (fielding)	-	-	9.980	-	-	-	-	-	0.400	-	-	-	-	-	-	-	-	-
SRR Initial Spares Package (ISP)	-	-	-	-	-	-	-	-	2.598	-	-	5.700	-	-	-	-	-	5.700

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10		P-1 Line Item Number / Title: 9675A00010 / RQ-11 (RAVEN)
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)
SRR Training	-	-	-	-	-	-	-	-	-	-	-	0.260	-	-	-	-	-	0.260
SRR Logistics (Fielding)	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
SRR Technical Spt	-	-	-	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	0.200
SRR Program Spt	-	-	-	-	-	-	-	-	-	-	-	0.225	-	-	-	-	-	0.225
<i>Subtotal: Recurring Cost</i>	-	-	253.123	-	-	-	-	-	12.364	-	-	6.885	-	-	-	-	-	6.885
<i>Subtotal: Flyaway Cost</i>	-	-	253.123	-	-	-	-	-	12.364	-	-	6.885	-	-	-	-	-	6.885
Hardware Cost																		
Recurring Cost																		
RQ-11B Raven Systems ^(t)	-	-	-	-	-	-	131.560	200	26.312	-	-	-	-	-	-	-	-	-
Short Range Reconnaissance (SRR) Air Vehicles ^(t)	-	-	-	-	-	-	30.000	258	7.740	35.000	475	16.625	-	-	-	35.000	475	16.625
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	34.052	-	-	16.625	-	-	-	-	-	16.625
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	34.052	-	-	16.625	-	-	-	-	-	16.625
Gross/Weapon System Cost	-	-	253.122	-	-	-	101.345	-	46.416	49.495	-	23.510	-	-	-	49.495	-	23.510

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	-	39.922	23.510	-	23.510
ANG	Quantity	-	-	-	-	-
	Total Obligation Authority	-	6.494	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	-	46.416	23.510	-	23.510

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9675A00010 / RQ-11 (RAVEN)	Item Number / Title [DODIC]: A00010 / RQ-11 (RAVEN)
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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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
RQ-11B Raven Systems		2019	AeroVironment, INC / Simi Valley, CA	SS / IDIQ	ACC - New Jersey	Feb 2019	Jul 2019	200	131.560	Y	Jul 2018	Jan 2019
Short Range Reconnaissance (SRR) Air Vehicles ^(f)		2019	TBD: Competitive / TBD	C / IDIQ	TBD	Aug 2019	Feb 2020	258	30.000	N		May 2019
Short Range Reconnaissance (SRR) Air Vehicles ^(f)		2020	TBD: Competitive / TBD	C / IDIQ	TBD	Feb 2020	Aug 2020	475	35.000	N		Aug 2019

^(f) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9675A00010 / RQ-11 (RAVEN)	Item Number / Title [DODIC]: A00010 / RQ-11 (RAVEN)
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2019													Fiscal Year 2020													BALANCE																		
O C C #	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																				
Short Range Reconnaissance (SRR) Air Vehicles																																																		
	1	2019	ARMY	258	0	258																							A	-	-	-	-	-	-	-	20	40	40	40	40	40	40	38		0				
	1	2020	ARMY	475	0	475																																		A	-	-	-	-	-	-	-	40	40	395
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10	P-1 Line Item Number / Title: 9675A00010 / RQ-11 (RAVEN)	Item Number / Title [DODIC]: A00010 / RQ-11 (RAVEN)
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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			
Short Range Reconnaissance (SRR) Air Vehicles																																	
	1	2019	ARMY	258	258	0																							0				
	1	2020	ARMY	475	80	395	40	40	40	40	40	40	40	40	40	35													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 Army								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 10				P-1 Line Item Number / Title: 9675A00010 / RQ-11 (RAVEN)				Item Number / Title [DODIC]: A00010 / RQ-11 (RAVEN)				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			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: Competitive - TBD	30	60	80	3	4	6	10	0	3	6	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-40, Budget Line Item Justification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 0013A01310 / Tactical Unmanned Aircraft System (TUAS)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604113A

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>)	-	-	-	12.100	-	12.100	1.101	25.345	38.100	55.400	-	132.046
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	12.100	-	12.100	1.101	25.345	38.100	55.400	-	132.046
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	12.100	-	12.100	1.101	25.345	38.100	55.400	-	132.046

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This Budget Line Item is a New Start program in FY2020.

The Future Unmanned Aircraft System (FUAS) is a critical system in the multi-domain battle concept that will employ cross-domain capabilities at all echelons and allow ground based forces to project power from land into other domains to defeat highly capable enemies, secure terrain, and consolidate gains. FUAS encompasses an array of capabilities from platoon soldiers to Division Commanders.

The Future Vertical Lift (FVL) Cross Functional Team (CFT) is overseeing a demonstration effort in FY2019 and FY2020 that will inform the Future Tactical Unmanned Aircraft System (FTUAS) requirement to develop capability that will ultimately replace the RQ-7B Shadow TUAS within the Brigade Combat Team (BCT) formation. Demonstration effort will focus on conducting analysis and obtaining field data that will be used to write the Capabilities Development Document that will serve as the formal requirement to replace the RQ-7B within the BCTs. As part of the program development, a Materiel Development Decision will be conducted in FY2021 followed by a decision that will identify the appropriate entry into the Milestone Decision process.

To fully enable these desired cross-domain capabilities, FTUAS will leverage universal and scalable control interfaces and plug-and-play, advanced payloads to optimize manned-unmanned teaming for air and ground maneuver units across all environments. These systems will employ multi-domain capabilities increasing the Army's ability to generate overmatch, provide the ground commander with multiple options, and enable joint force freedom of maneuver. Key attributes of the FTUAS include: (1) Reach: Expeditionary maneuver and mobility through increased speed, range, endurance, and payload capacity; (2) Protection: The capability and capacity to operate across a wider depth and breadth of domains, including high threat and denied environments, with assured communications, navigation, and reduced visual, electronic, and audio signatures able to overcome enemy countermeasures in high threat, anti-access and area denial (A2AD) environments; and (3) Lethality: A broad range of sensors and cross-domain fires that increase the speed of detecting, acquiring, identifying, and prioritizing targets to suppress, neutralize, and destroy enemy forces.

FTUAS will consist of an aircraft system that will include the airframe, propulsion, avionics, communications, navigation, and software systems; aircraft-specific ground support equipment including take-off and landing systems, power generation, transportation, or unique command and control equipment; aircraft software; and required engineering, logistics, and programmatic support.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	
Army										
	Quantity	-	-	-	-	-	-	-	-	
	Total Obligation Authority	-	-	12.100	-	12.100	1.101	25.345	38.100	55.400
Total:	Quantity	-	-	-	-	-	-	-	-	

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army							Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary					P-1 Line Item Number / Title: 0013A01310 / Tactical Unmanned Aircraft System (TUAS)				
ID Code (A=Service Ready, B=Not Service Ready):			Program Elements for Code B Items: N/A			Other Related Program Elements: 0604113A			
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	-	-	12.100	-	12.100	1.101	25.345	38.100	55.400

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 0013A01310 / Tactical Unmanned Aircraft System (TUAS)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604113A

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	A01311 / Future Tactical Unmanned Aircraft System (TUAS)	P-5a			- / -	- / -	- / -	- / 12.100	- / -	- / 12.100
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / -	- / 12.100	- / -	- / 12.100

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

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

Justification:
 FY2020 base procurement dollars in the amount of \$12.1 million supports the FVL CFT FTUAS demonstration: Specifically, the procurement of 12 attrition air vehicles, New Equipment Training (NET) and PM support.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 0013A01310 / Tactical Unmanned Aircraft System (TUAS)	Item Number / Title [DODIC]: A01311 / Future Tactical Unmanned Aircraft System (TUAS)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	-	-	-	12.100	-	12.100
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	12.100	-	12.100
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	12.100	-	12.100

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-

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																		
Non Recurring Cost																		
Air Vehicles ^(†)	-	-	-	-	-	-	-	-	-	632.500	12	7.590	-	-	-	632.500	12	7.590
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	7.590	-	-	-	-	-	7.590
<i>Subtotal: Flyaway Cost</i>	-	-	-	-	-	-	-	-	-	-	-	7.590	-	-	-	-	-	7.590
Package Fielding Cost																		
Non Recurring Cost																		
New Equipment Training	-	-	-	-	-	-	-	-	-	-	-	2.548	-	-	-	-	-	2.548
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.548	-	-	-	-	-	2.548
<i>Subtotal: Package Fielding Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.548	-	-	-	-	-	2.548
Support - Program Management Cost																		
Government Management	-	-	-	-	-	-	-	-	-	-	-	1.962	-	-	-	-	-	1.962
<i>Subtotal: Support - Program Management Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.962	-	-	-	-	-	1.962
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	12.100	-	-	-	-	-	12.100

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 0013A01310 / Tactical Unmanned Aircraft System (TUAS)	Item Number / Title [DODIC]: A01311 / Future Tactical Unmanned Aircraft System (TUAS)

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

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	12.100	-	12.100
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	12.100	-	12.100

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20			P-1 Line Item Number / Title: 0013A01310 / Tactical Unmanned Aircraft System (TUAS)					Item Number / Title [DODIC]: A01311 / Future Tactical Unmanned Aircraft System (TUAS)				
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
Air Vehicles		2020	TBD / TBD	C / Various	TBD	Jan 2020	Jan 2021	12	632.500	N	Feb 2019	Mar 2019

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 3167A09999 / Spectrum Army Video

ID Code (A=Service Ready, B=Not Service Ready): **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>)	4.122	3.907	-	-	-	-	-	-	-	-	-	8.029
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	4.122	3.907	-	-	-	-	-	-	-	-	-	8.029
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	4.122	3.907	-	-	-	-	-	-	-	-	-	8.029

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Commercial Spectrum Enhancement Act (CSEA) Title II, Public Law 108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the costs associated with relocating communication systems from spectrum bands which were auctioned for commercial purposes.

- The SRF is funded with proceeds from Federal Communications Commission (FCC) conducted auctions of spectrum licenses.
- SRF funds have an indefinite obligation period and remain available until expended (X Year).
- The Department of Defense (DoD) Information Officer (CIO) executes oversight of the DoD spectrum relocation and sharing efforts.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	3.907	-	-	-	-	-	-	-	-
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	3.907	-	-	-	-	-	-	-	-

Justification:

The Tactical-Video (TAC-V) Downlink system is an integral component of the Security and Support (S&S) mission set of capabilities. The system consists of the video transmitter and antenna suite which are mounted on the UH-72 Lakota aircraft, the ground-based receiver antenna array, and a ground operator handheld receiver/display device for dismounted operations.

The systems allows the platform to transmit streaming video to the operator on the ground that receives, records, displays, and can play back real-time full motion video imagery and moving map metadata. This system is utilized in the support of state and federal law enforcement agencies, emergency first responders, and border patrol and customs agencies and as such, it is vital that this capability remain available to those agencies.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 4742A05001 / Helicopter, Light Utility (LUH)

ID Code (A=Service Ready, B=Not Service Ready): **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>)	449	23	4	-	-	-	-	-	-	-	-	476
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,918.477	198.383	34.000	-	-	-	-	-	-	-	-	3,150.860
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,918.477	198.383	34.000	-	-	-	-	-	-	-	-	3,150.860
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,918.477	198.383	34.000	-	-	-	-	-	-	-	-	3,150.860

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	6,499.949	8,625.348	8,500.000	-	-	-	-	-	-	-	-	6,619.454

Description:

The UH-72A platform will provide the flexibility to respond to Homeland Security (HLS) requirements, conduct civil search and rescue operations, support damage assessment, support test and training centers, perform generating force missions, augment the HH-60 Medical Evacuation (MEDEVAC) aircraft, and provide support to CONUS counterdrug operations. The UH-72A will conduct general support utility helicopter missions and execute tasks as part of an integrated effort with other joint services, government agencies, and non-governmental organizations. The UH-72A provides time-sensitive transport of supplies or key personnel, air mobility to assist civil authorities through the execution of search and rescue or disaster relief operations, advanced warning/detection of external threats to include threats to our borders, augmentation of air ambulance capabilities, and limited command and control operations in the conduct of HLS. As part of the Aviation Restructure Initiative (ARI) the UH-72A became the primary training aircraft at the US Army Aviation Center of Excellence (USAACE) in Ft Rucker. The UH-72A program is 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
Army									
Quantity	23	4	-	-	-	-	-	-	-
Total Obligation Authority	198.383	34.000	-	-	-	-	-	-	-
Total:									
Secondary Distribution									
Quantity	23	4	-	-	-	-	-	-	-
Total Obligation Authority	198.383	34.000	-	-	-	-	-	-	-

Justification:

-- FY20 has no Base production dollars
 -- FY19 \$34 million via Congressional funding supports procurement of 4 UH-72A Lakota aircraft.
 -- FY18 base procurement dollars in the amount of \$198.383 million supports procurement of 23 UH-72A Lakota aircraft, fielding, and program management for one year. \$90 million of the \$198.383 million arrived via Congressional funding and supports procurement of 11 UH-72A Lakota aircraft.

-- Of the "Prior years" quantity,
 16 of the FY16 aircraft buy were delivered in FY17-FY18,
 23 of the FY17 aircraft buy will be delivered in FY18-FY19,

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary		P-1 Line Item Number / Title: 4742A05001 / Helicopter, Light Utility (LUH)
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>23 of the FY18 aircraft buy will be delivered in FY19-FY21, and 4 of the FY19 aircraft buy will be delivered in FY21.</p> <p>-- Current Army Acquisition Objective is 478 aircraft and the current Army Procurement Objective is 473 aircraft. -- Total procurement quantity of 472 includes Puerto Rico attrited aircraft. Two High-Altitude Army National Guard Aviation Training Site aircraft procured with National Guard Bureau funding are not included in total quantity.</p> <p>In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.</p>		

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 5757A05111 / AH-64 Apache Block IIIA Reman

ID Code (A=Service Ready, B=Not Service Ready): **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>)	292	48	48	48	-	48	50	31	42	39	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6,020.653	919.576	924.158	981.399	-	981.399	983.856	683.473	822.512	975.519	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	1,042.026	185.160	170.910	174.550	-	174.550	190.870	169.460	192.230	169.218	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	4,978.627	734.416	753.248	806.849	-	806.849	792.986	514.013	630.282	806.301	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	1,227.186	170.910	174.550	190.870	-	190.870	169.460	192.230	169.218	-	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	6,205.813	905.326	927.798	997.719	-	997.719	962.446	706.243	799.500	806.301	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 Thousands</i>)	60.660	35.210	18.210	18.780	-	18.780	17.270	18.800	0.000	0.000	Continuing	Continuing
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	20,618.675	19,157.833	19,253.292	20,445.813	-	20,445.813	19,677.120	22,047.516	19,583.619	25,013.308	Continuing	Continuing

Description:

AH-64E Reman is a complete remanufacture using a new airframe and meets all the requirements for Army and Joint interoperability goals for the future and adds significant combat capability while addressing obsolescence issues, ensuring the aircraft remains a viable combat multiplier beyond its lifecycle. The Army's only heavy attack helicopter, the AH-64E is fully digital with the latest technologies, adding significant combat capability to the aircraft. The AH-64E Apache is implementing an incremental design and fielding strategy as noted in the approved Capability Production Document (CPD). AH-64E Capability Version 1 includes Improved Drive and Propulsion System, Composite Main Rotor Blades (CMRB), Unmanned Aircraft System (UAS) Level III-IV Control, Improved Communications Suite, Improved Electronics / Modular Open Systems Approach, and Radar Electronics Unit (REU). Capability Version 4 includes Link 16, Air to Air to Ground (AAG) Video Relay, System Level Embedded Diagnostics (SLED), and provisions for Reduced-Size Crashworthy External Fuel Systems (RCEFS). Capability Version 6 includes Fire Control Radar (FCR) enhancements, Maritime Targeting Mode, Expanded Link-16, Image Blending, Multi-Mode Laser (MML), and Interactive Electronic Technical Manual (IETM) Upgrade. Production Lots 1-4 are Version 1 capable, Production Lots 5-8 are Version 4 capable, and Version 6 is planned for inclusion into the remaining Production Lots beginning with Production Lot 9. Upgrades are integrated as incremental block modifications. Other associated Government Furnished Equipment (GFE) such as the, Modernized Radar Frequency Interferometer (M-RFI), Radar Electronics Unit (REU), and Manned/Unmanned Teaming Extended Capability (MUMT-X) will be procured and provided in accordance with the basis of issue plan. The program addresses operational shortfalls identified during real-world combat missions, meets Apache Capability Production Document (CPD) requirements for modernization, and provides necessary training, initial spares, and Peculiar Ground Support Equipment (PGSE). AH-64E aircraft entered the fleet in 2012.

"In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	48	48	48	-	48	50	31	42	-
	Total Obligation Authority	905.326	927.798	997.719	-	997.719	962.446	706.243	799.500	-
ANG	Quantity	-	-	-	-	-	-	-	-	39
	Total Obligation Authority	-	-	-	-	-	-	-	-	806.301
Total: Secondary Distribution	Quantity	48	48	48	-	48	50	31	42	39
	Total Obligation Authority	905.326	927.798	997.719	-	997.719	962.446	706.243	799.500	806.301

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 5757A05111 / AH-64 Apache Block IIIA Reman

ID Code (A=Service Ready, B=Not Service Ready): **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	A05111 / AH-64 Apache Block IIIA Reman	P-5a, P-21			292 / 6,020.653	48 / 919.576	48 / 924.158	48 / 981.399	- / -	48 / 981.399
P-40	Total Gross/Weapon System Cost				292 / 6,020.653	48 / 919.576	48 / 924.158	48 / 981.399	- / -	48 / 981.399

*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:
 FY20 Base procurement dollars in the amount of \$997.719 millions supports Advance Procurement (AP), Full Rate Production (FRP) of AH-64E Apache Reman aircraft and associated support. This program was restructured in 2010 from the single AH-64E Apache (A05111) into two separate programs, AH-64E Apache Reman (A05111) and AH-64E Apache New Build (A05133).

The Apache Reman Program assumes a cost sharing with the New Build Program in accordance with the New Build Army Program Baseline (APB).

The current AH-64E Apache Remanufacture and New Build Army Procurement Objective (APO) is 791 Aircraft. The total AH-64E (Remanufacture and New Build) Army Acquisition Objective (AAO) is 812 Aircraft.

The Apache Reman Program quantities and associated funding include a Multi-year contract from FY17- FY21 and assumes approval for a subsequent Multi-year contract in FY22 through FY26. The Apache Reman and New Build Programs are planning continued production of aircraft through FY2027 to meet the Army Procurement Objective (APO).

Currently the total lead time (time from when first materials must be committed to aircraft delivery) is in excess of 24 months. The Cost Assessment and Program Evaluation (CAPE) Independent Cost Estimate (ICE) utilized 18% to 22% for Advance Procurement (AP). Each year's AP can be divided into 2 segments: 1) Government Furnished Equipment (GFE) such as engines, sensors and avionics and 2) Contractor Furnished Equipment (CFE). Material includes production components to support deliveries, provisioning material, pre-modification effort, and any potential termination liability costs. Long lead items include, but not limited to, such items as the Main Rotor Drive Shaft, Composite Main Rotor Blade, Improved Drive System, and Composite Stabilator IAW Financial Management Regulation (FMR) 7000.14-R.

The Economical Production Rate of 98 aircraft per year is the maximum capacity at Full Rate Production assuming a 1-8-5 shift. This requirement is driven primarily by the production rate associated with current fuselage tooling capabilities. In order to increase the 1-8-5 (single shift) production rate, additional tooling must be procured. Capacity can be expanded to 144 aircraft per year with additional investment.

Comments:
 "In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman	Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (<i>Units in Each</i>)	292	48	48	48	-	48
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6,020.653	919.576	924.158	981.399	-	981.399
Less PY Advance Procurement (<i>\$ in Millions</i>)	1,042.026	185.160	170.910	174.550	-	174.550
Net Procurement (P-1) (<i>\$ in Millions</i>)	4,978.627	734.416	753.248	806.849	-	806.849
Plus CY Advance Procurement (<i>\$ in Millions</i>)	1,227.186	170.910	174.550	190.870	-	190.870
Total Obligation Authority (<i>\$ in Millions</i>)	6,205.813	905.326	927.798	997.719	-	997.719

(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>)	20,618.675	19,157.833	19,253.292	20,445.813	-	20,445.813

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																		
CFE ^(t)	16,091.510	292	4,698.721	12,956.958	48	621.934	14,066.833	48	675.208	14,787.542	48	709.802	-	-	-	14,787.542	48	709.802
GFE	2,571.295	292	750.818	4,514.250	48	216.684	3,527.271	48	169.309	3,325.729	48	159.635	-	-	-	3,325.729	48	159.635
Non-Recurring Costs	-	-	232.749	-	-	3.368	-	-	3.588	-	-	3.723	-	-	-	-	-	3.723
Support Equipment	-	-	70.515	-	-	14.709	-	-	20.471	-	-	28.099	-	-	-	-	-	28.099
Other Costs	-	-	208.077	-	-	45.540	-	-	45.848	-	-	66.688	-	-	-	-	-	66.688
Initial Spares	-	-	59.773	-	-	17.341	-	-	9.734	-	-	13.452	-	-	-	-	-	13.452
<i>Subtotal: Recurring Cost</i>	-	-	6,020.653	-	-	919.576	-	-	924.158	-	-	981.399	-	-	-	-	-	981.399
<i>Subtotal: Flyaway Cost</i>	-	-	6,020.653	-	-	919.576	-	-	924.158	-	-	981.399	-	-	-	-	-	981.399
Gross/Weapon System Cost	20,618.675	292	6,020.653	19,157.833	48	919.576	19,253.292	48	924.158	20,445.813	48	981.399	-	-	-	20,445.813	48	981.399

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	48	48	48	-	48
	Total Obligation Authority	905.326	927.798	997.719	-	997.719
Total:	Quantity	48	48	48	-	48
Secondary Distribution	Total Obligation Authority	905.326	927.798	997.719	-	997.719

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20			P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman				Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman				

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
CFE ^(†)		2014	The Boeing Company / Mesa, AZ	SS / FPIF	AMCOM	Mar 2014	Feb 2015	35	15,570.229	Y		Jul 2012
CFE ^(†)		2015	The Boeing Company / Mesa, AZ	SS / FPIF	AMCOM	Mar 2015	Feb 2016	53	14,679.510	Y		Aug 2014
CFE ^(†)		2016	The Boeing Company / Mesa, AZ	SS / FPIF	AMCOM	Mar 2016	Jan 2017	64	13,759.470	Y		Aug 2014
CFE		2017	The Boeing Company / Mesa, AZ	SS / FFP	AMCOM	Mar 2017	Jan 2019	52	13,565.810	Y		Aug 2015
CFE ^(†)		2018	The Boeing Company / Mesa, AZ	SS / FFP	AMCOM	Mar 2018	Jul 2019	48	12,956.958	Y		Aug 2015
CFE ^(†)		2019	The Boeing Company / Mesa, AZ	SS / FFP	AMCOM	Mar 2019	Jul 2020	48	14,066.833	Y		Aug 2015
CFE ^(†)		2020	The Boeing Company / Mesa, AZ	SS / FFP	AMCOM	Mar 2020	May 2021	48	14,787.542	Y		Aug 2015

^(†) indicates the presence of a P-21

Remarks:

Major Contractor Furnished Equipment (CFE) cost drivers include, but not limited to, the Fuselage, Transmission, and Composite Main Rotor Blades. Major Government Furnished Equipment (GFE) includes engines, Embedded Global Positioning System Inertial Navigation Systems (EGIs), Radar Electronics Unit (REU), Modernized Target Acquisition Designation System (MTADS)/Pilot Night Vision System (PNVS) and Manned/Unmanned Teaming Extended Capability (MUMT-X). Other Cost includes Support Equipment, Peculiar Ground Support Equipment (PGSE), and Government Program Management Support.

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman	Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2014														Fiscal Year 2015										B A L A N C E							
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	Calendar Year 2014														Calendar Year 2015																
							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						
CFE																																					
Prior Years Deliveries: 88																																					
1	2014	ARMY	35	0	35																																9
1	2015	ARMY	53	0	53																															53	
1	2016	ARMY	64	0	64																															64	
1	2018	ARMY	48	0	48																															48	
1	2019	ARMY	48	0	48																															48	
1	2020	ARMY	48	0	48																															48	

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Exhibit P-21, Production Schedule: PB 2020 Army															Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman										Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2016												Fiscal Year 2017												BALANCE		
O C O #	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
CFE																															
Prior Years Deliveries: 88																															
1		2014	ARMY	35	26	9	3	3	3																			0			
1		2015	ARMY	53	0	53	-	-	-	-	3	4	4	3	2	3	2	2	2	3	4	3	-	-	-	-	-	18			
1		2016	ARMY	64	0	64						A	-	-	-	-	-	-	-	-	1	4	4	4	5	5	5	5	26		
1		2018	ARMY	48	0	48																						48			
1		2019	ARMY	48	0	48																						48			
1		2020	ARMY	48	0	48																						48			

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Exhibit P-21, Production Schedule: PB 2020 Army															Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman										Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman									

Cost Elements <i>(Units in Each)</i>						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				
CFE																																		
Prior Years Deliveries: 88																																		
1		2014	ARMY	35	35	0																							0					
1		2015	ARMY	53	35	18	-	-	-	-	1	6	6	5																0				
1		2016	ARMY	64	38	26	5	5	5	6	5																		0					
1		2018	ARMY	48	0	48						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	4	39				
1		2019	ARMY	48	0	48																				A	-	-	-	-	-	-	-	48
1		2020	ARMY	48	0	48																											48	

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Exhibit P-21, Production Schedule: PB 2020 Army															Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman										Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman				

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020										Fiscal Year 2021										BALANCE				
O 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
CFE																														
Prior Years Deliveries: 88																														
1		2014	ARMY	35	35	0																							0	
1		2015	ARMY	53	53	0																							0	
1		2016	ARMY	64	64	0																							0	
1		2018	ARMY	48	9	39	5	4	4	5	4	4	4	4	5														0	
1		2019	ARMY	48	0	48	-	-	-	-	-	-	-	-	5	5	5	5	4	4	5	5	5	5					0	
1		2020	ARMY	48	0	48																							23	
							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 Army															Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman										Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE	
O C C #	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

CFE																																		
Prior Years Deliveries: 88																																		
1	2014	ARMY	35	35	0																													0
1	2015	ARMY	53	53	0																													0
1	2016	ARMY	64	64	0																													0
1	2018	ARMY	48	48	0																													0
1	2019	ARMY	48	48	0																													0
1	2020	ARMY	48	25	23		5	4	4	5	5																							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 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman
		Item Number / Title [DODIC]: A05111 / AH-64 Apache Block IIIA Reman

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			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	The Boeing Company - Mesa, AZ	48	98	144	0	11	13	24	0	6	12	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).

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary	P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman
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Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,227.186	170.910	174.550	190.870	-	190.870	169.460	192.230	169.218	-	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,227.186	170.910	174.550	190.870	-	190.870	169.460	192.230	169.218	-	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	1,227.186	170.910	174.550	190.870	-	190.870	169.460	192.230	169.218	-	Continuing	Continuing

Description:

AH-64E Reman is a complete remanufacture using a new airframe and meets all the requirements for Army and Joint interoperability goals for the future and adds significant combat capability while addressing obsolescence issues, ensuring the aircraft remains a viable combat multiplier beyond its lifecycle. The Army's only heavy attack helicopter, the AH-64E is fully digital with the latest technologies, adding significant combat capability to the aircraft. The AH-64E Apache is implementing an incremental design and fielding strategy as noted in the approved Capability Production Document (CPD). AH-64E Capability Version 1 includes Improved Drive and Propulsion System, Composite Main Rotor Blades (CMRB), Unmanned Aircraft System (UAS) Level III-IV Control, Improved Communications Suite, Improved Electronics / Modular Open Systems Approach, and Radar Electronics Unit (REU). Capability Version 4 includes Link 16, Air to Air to Ground (AAG) Video Relay, System Level Embedded Diagnostics (SLED), and provisions for Reduced-Size Crashworthy External Fuel Systems (RCEFS). Capability Version 6 includes Fire Control Radar (FCR) enhancements, Maritime Targeting Mode, Expanded Link-16, Image Blending, Multi-Mode Laser (MML), and Interactive Electronic Technical Manual (IETM) Upgrade. Production Lots 1-4 are Version 1 capable, Production Lots 5-8 are Version 4 capable, and Version 6 is planned for inclusion into the remaining Production Lots beginning with Production Lot 9. Upgrades are integrated as incremental block modifications. Other associated Government Furnished Equipment (GFE) such as the, Modernized Radar Frequency Interferometer (M-RFI), Radar Electronics Unit (REU), and Manned/Unmanned Teaming Extended Capability (MUMT-X) will be procured and provided in accordance with the basis of issue plan. The program addresses operational shortfalls identified during real-world combat missions, meets Apache Capability Production Document (CPD) requirements for modernization, and provides necessary training, initial spares, and Peculiar Ground Support Equipment (PGSE). AH-64E aircraft entered the fleet in 2012.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary	P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman
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Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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*	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-10	A05111 / AH-64 Apache Block IIIA Reman			292 / 1,227.186	48 / 170.910	48 / 174.550	48 / 190.870	- / -	48 / 190.870
P-40	Total Gross/Weapon System Cost			292 / 1,227.186	48 / 170.910	48 / 174.550	48 / 190.870	- / -	48 / 190.870

*Title represents the P-10 Title for Advance Procurement.

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

Justification:
 FY20 Base procurement dollars in the amount of \$997.719 million supports Advance Procurement (AP), Full Rate Production (FRP) of AH-64E Apache Reman aircraft and associated support. This program was restructured in 2010 from the single AH-64E Apache (A05111) into two separate programs, AH-64E Apache Reman (A05111) and AH-64E Apache New Build (A05133).
 The Apache Reman Program assumes a cost sharing with the New Build Program in accordance with the New Build APB.
 The current AH-64E Apache Remanufacture and New Build Army Procurement Objective (APO) is 791 Aircraft. The total AH-64E (Remanufacture and New Build) Army Acquisition Objective (AAO) is 812 Aircraft.
 The Apache Reman Program quantities and associated funding include a Multi-year contract from FY17- FY21 and assumes approval for a subsequent Multi-year contract in FY22 through FY26. The Apache Reman and New Build Programs are planning continued production of aircraft through FY2027 to meet the Army Procurement Objective (APO).
 Currently the total lead time (time from when first materials must be committed to aircraft delivery) is in excess of 24 months. The Cost Assessment and Program Evaluation (CAPE) Independent Cost Estimate (ICE) utilized 18% to 22% for Advance Procurement (AP). Each year's AP can be divided into 2 segments: 1) Government Furnished Equipment (GFE) such as engines, sensors and avionics and 2) Contractor Furnished Equipment (CFE). Material includes production components to support deliveries, provisioning material, pre-modification effort, and any potential termination liability costs. Long lead items include, but not limited to, such items as the Main Rotor Drive Shaft, Composite Main Rotor Blade, Improved Drive System, and Composite Stabilator IAW Financial Management Regulation (FMR) 7000.14-R.
 The Economical Production Rate of 98 aircraft per year is the maximum capacity at Full Rate Production assuming a 1-8-5 shift. This requirement is driven primarily by the production rate associated with current fuselage tooling capabilities. In order to increase the 1-8-5 (single shift) production rate, additional tooling must be procured. Capacity can be expanded to 144 aircraft per year with additional investment.

Comments:
 "In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

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Exhibit P-10, Advance Procurement Requirements Analysis (page 1 - Budget Funding Justification): PB 2020 Army					Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman			P-5 Number / Title: A05111 / AH-64 Apache Block IIIA Reman	
First System (2020) Award Date: July 2009		First System (2020) Completion Date: November 2011		Interval Between Systems: 1 Months		
AH-64 Apache Block IIIA Reman		Production Leadtime <i>(Months)</i>	Prior Years <i>(Each)</i>	FY 2018 <i>(Each)</i>	FY 2019 <i>(Each)</i>	FY 2020 <i>(Each)</i>
Quantity			292	48	48	48
Cost Elements		When Required <i>(Months)</i>	Prior Years <i>(\$ M)</i>	FY 2018 <i>(\$ M)</i>	FY 2019 <i>(\$ M)</i>	FY 2020 <i>(\$ M)</i>
Other						
CFE		6	806.312	170.910	115.203	190.870
GFE		6	420.874	-	59.347	-
<i>Total: Other</i>			<i>1,227.186</i>	<i>170.910</i>	<i>174.550</i>	<i>190.870</i>
Total Advance Procurement/Obligation Authority			1,227.186	170.910	174.550	190.870

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Exhibit P-10, Advance Procurement Requirements Analysis (page 2 - Budget Funding Justification): PB 2020 Army						Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5757A05111 / AH-64 Apache Block IIIA Reman			P-5 Number / Title: A05111 / AH-64 Apache Block IIIA Reman		
		FY 2020					
Cost Elements	QPA (Each)	Production Leadtime (Months)	Unit Cost (\$ K)	Contract Forecast Date	2020 Qty (Each)	For FY	Total Cost Request (\$ M)
Other							
CFE	26						190.870
GFE	26						-
<i>Total: Other</i>							190.870
Total Advance Procurement/Obligation Authority							190.870

Description:
 Currently the total lead time (time from when first materials must be committed to aircraft delivery) is in excess of 24 months. The Cost Assessment and Program Evaluation (CAPE) Independent Cost Estimate (ICE) utilized 18% to 22% for Advance Procurement (AP) for single year contracts. Each year's AP can be divided into 2 segments: 1) Government Furnished Equipment (GFE) such as engines, sensors and avionics and 2) Contractor Furnished Equipment (CFE). Material includes production components to support deliveries, provisioning material, pre-modification effort, and any potential termination liability costs. Long lead items include the Main Rotor Drive Shaft, Composite Main Rotor Blade, Improved Drive System, and Composite Stabilator.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 5840A05133 / AH-64 Apache Block IIIB New Build

ID Code (A=Service Ready, B=Not Service Ready): **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>)	25	31	18	0	-	0	0	-	-	-	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	810.929	1,023.200	524.587	58.600	-	58.600	0.000	-	-	-	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	84.507	71.800	71.900	58.600	-	58.600	-	-	-	-	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	726.422	951.400	452.687	0.000	-	0.000	0.000	-	-	-	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	156.307	71.900	58.600	-	-	-	-	-	-	-	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	882.729	1,023.300	511.287	0.000	-	0.000	0.000	-	-	-	Continuing	Continuing

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	33.600	32.310	27.810	21.990	-	21.990	34.120	-	-	-	Continuing	Continuing
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	32,437.160	33,006.452	29,143.722	-	-	-	-	-	-	-	Continuing	Continuing

Description:

The AH-64E Apache New Build aircraft is the same configuration as the AH-64E Remanufacture aircraft and procured using the same contracts. While the AH-64E Remanufacture program inducts aging AH-64D aircraft into a remanufacture production line, the AH-64E New Build program assembles all new components resulting in completely new aircraft at the end of the production process. These aircraft are procured at a significantly higher cost because they include all new components. A new build Modernized Target Acquisition Designation Sight / Pilot Night Vision Sensor (MTADS/PNVS) system will be procured and provided with each aircraft. Other associated Government Furnished Equipment (GFE) such as the Fire Control Radar (FCR), Modernized Radar Frequency Interferometer (M-RFI), Radar Electronics Unit (REU), and Manned/Unmanned Teaming Extended Capability (MUMT-X) will be procured and provided in accordance with the basis of issue plan.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	31	18	-	-	-	-	-	-	-
Total Obligation Authority	1,023.300	511.287	-	-	-	-	-	-	-
Total:									
Secondary Distribution									
Quantity	31	18	-	-	-	-	-	-	-
Total Obligation Authority	1,023.300	511.287	-	-	-	-	-	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 5840A05133 / AH-64 Apache Block IIIB New Build

ID Code (A=Service Ready, B=Not Service Ready): **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	A05133 / AH-64 Apache Block IIIB New Build	P-5a, P-21			25 / 810.929	31 / 1,023.200	18 / 524.587	0 / 58.600	- / -	0 / 58.600
P-40	Total Gross/Weapon System Cost				25 / 810.929	31 / 1,023.200	18 / 524.587	0 / 58.600	- / -	0 / 58.600

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

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

Justification:
 This program was restructured in 2010 from the single AH-64E Apache (A05111) into two separate programs, AH-64E Apache Reman (A05111) and AH-64E Apache New Build (A05133).
 The current AH-64E Apache Remanufacture and New Build Army Procurement Objective (APO) is 791 Aircraft. The total AH-64E (Remanufacture and New Build) Army Acquisition Objective (AAO) is 812 Aircraft.
 Additionally, the New Build program prior year funding includes Congressionally appropriated Overseas Contingency Operations (OCO) funding to procure New Build aircraft to fill aircraft shortages due to combat attrition and training loss. OCO funding does not provide advance procurement for long lead items for these aircraft.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build	Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	25	31	18	0	-	0
Gross/Weapon System Cost (\$ in Millions)	810.929	1,023.200	524.587	58.600	-	58.600
Less PY Advance Procurement (\$ in Millions)	84.507	71.800	71.900	58.600	-	58.600
Net Procurement (P-1) (\$ in Millions)	726.422	951.400	452.687	0.000	-	0.000
Plus CY Advance Procurement (\$ in Millions)	156.307	71.900	58.600	-	-	-
Total Obligation Authority (\$ in Millions)	882.729	1,023.300	511.287	0.000	-	0.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	32,437.160	33,006.452	29,143.722	-	-	-

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																			
CFE ^(†)	22,312.840	25	557.821	20,401.387	31	632.443	16,622.278	18	299.201	-	-	58.600	-	-	-	-	-	58.600	
GFE	6,998.080	25	174.952	11,066.548	31	343.063	10,934.833	18	196.827	-	-	-	-	-	-	-	-	-	
Other Costs	-	-	65.527	-	-	37.570	-	-	22.572	-	-	-	-	-	-	-	-	-	
Initial Spares	-	-	2.629	-	-	10.124	-	-	5.987	-	-	-	-	-	-	-	-	-	
Subtotal: Recurring Cost	-	-	800.929	-	-	1,023.200	-	-	524.587	-	-	58.600	-	-	-	-	-	58.600	
Non Recurring Cost																			
Non-Recurring Cost	-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Non Recurring Cost	-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Flyaway Cost	-	-	810.929	-	-	1,023.200	-	-	524.587	-	-	58.600	-	-	-	-	-	58.600	
Gross/Weapon System Cost	32,437.160	25	810.929	33,006.452	31	1,023.200	29,143.722	18	524.587	-	0	58.600	-	-	-	-	-	0	58.600

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	31	18	-	-	-
	Total Obligation Authority	1,023.300	511.287	-	-	-
Total:	Quantity	31	18	0	-	0

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build	Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Secondary Distribution	Total Obligation Authority	1,023.300	511.287	0.000	-	0.000

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20			P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build				Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build				

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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
CFE ^(†)		2013	The Boeing Company / Mesa	SS / FPIF	AMCOM	Mar 2014	Sep 2014	13	16.375	Y		Jul 2012
CFE		2014	The Boeing Company / Mesa	SS / FPIF	AMCOM	Sep 2014	Nov 2016	4	16.874	Y		Jul 2014
CFE ^(†)		2017	The Boeing Company / Mesa	SS / FFP	AMCOM	Sep 2017	Dec 2019	8	17.850	Y		Apr 2015
CFE ^(†)		2018	The Boeing Company / Mesa	SS / FFP	AMCOM	Aug 2018	Sep 2020	31	20.401	Y		Apr 2015
CFE ^(†)		2019	The Boeing Company / Mesa	SS / FFP	AMCOM	Jan 2019	Feb 2022	18	16.622	Y		Apr 2015

^(†) indicates the presence of a P-21

Remarks:

Major Contractor Furnished Equipment (CFE) cost drivers include the Fuselage, Transmission, and Composite Main Rotor Blades. Government Furnished Equipment (GFE) includes engines, Embedded Global Positioning System Inertial Navigation Systems (EGIs), Radar Electronics Unit (REU), Modernized Target Acquisition Designation System (MTADS)/Pilot Night Vision System (PNVS) and Manned/Unmanned Teaming Extended Capability (MUMT-X). Other Cost includes Support Equipment, Peculiar Ground Support (PGSE), and Government Program Management Support.

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Exhibit P-21, Production Schedule: PB 2020 Army																							Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build										Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build																			
Cost Elements (Units in Each)							Fiscal Year 2014										Fiscal Year 2015										B A L A N C E												
O C C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	Calendar Year 2014												Calendar Year 2015																				
							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								
CFE																																							
	1	2013	ARMY	13	0	13													A	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	2	-	-	3
	1	2017	ARMY	8	0	8																									8								
	1	2018	ARMY	31	0	31																									31								
	1	2019	ARMY	18	0	18																									18								

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Exhibit P-21, Production Schedule: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build
		Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2016														Fiscal Year 2017										B A L A N C E		
O C C O	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	
CFE																																
	1	2013	ARMY	13	10	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2		0
	1	2017	ARMY	8	0	8																									A -	8
	1	2018	ARMY	31	0	31																										31
	1	2019	ARMY	18	0	18																										18
							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 Army															Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build										Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build									

Cost Elements <i>(Units in Each)</i>						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					
CFE																																			
1		2013	ARMY	13	13	0																									0				
1		2017	ARMY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8				
1		2018	ARMY	31	0	31										A	-	-	-	-	-	-	-	-	-	-	-	-	-	31					
1		2019	ARMY	18	0	18																									18				

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Exhibit P-21, Production Schedule: PB 2020 Army															Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build										Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020														Fiscal Year 2021														BALANCE	
O 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					
CFE																																			
1		2013	ARMY	13	13	0																													0
1		2017	ARMY	8	0	8	-	-	1	1	-	1	2	-	1	2																			0
1		2018	ARMY	31	0	31	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	9	
1		2019	ARMY	18	0	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	
							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 Army															Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20										P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build										Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build									

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					
CFE																																			
1	2013	ARMY		13	13	0																								0					
1	2017	ARMY		8	8	0																								0					
1	2018	ARMY		31	22	9	2	2	3	2																			0						
1	2019	ARMY		18	0	18	-	-	-	-	3	1	2	2	1	2	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 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build
		Item Number / Title [DODIC]: A05133 / AH-64 Apache Block IIIB New Build

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	The Boeing Company - Mesa	48	98	144	1	11	32	43	1	6	32	38

Remarks:
 The Economical Production Rate of 98 aircraft per year is the maximum capacity at Full Rate Production assuming a 1-8-5 shift. This requirement is driven primarily by the production rate associated with current fuselage tooling capabilities. In order to increase the 1-8-5 (single shift) production rate, additional tooling must be procured. The minimum rate of 48 aircraft per year is based upon Combined Remanufacture and New Build quantities.

"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, Advance Procurement Budget Line Item Justification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary	P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build
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Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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
Gross/Weapon System Cost (<i>\$ in Millions</i>)	156.307	71.900	58.600	-	-	-	-	-	-	-	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	156.307	71.900	58.600	-	-	-	-	-	-	-	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	156.307	71.900	58.600	-	-	-	-	-	-	-	Continuing	Continuing

Description:

The AH-64E Apache New Build aircraft is the same configuration as the AH-64E Remanufacture aircraft and procured using the same contracts. While the AH-64E Remanufacture program inducts aging AH-64D aircraft into a remanufacture production line, the AH-64E New Build program assembles all new components resulting in completely new aircraft at the end of the production process. These aircraft are procured at a significantly higher cost because they include all new components. A new build Modernized Target Acquisition Designation Sight / Pilot Night Vision Sensor (MTADS/PNVS) system will be procured and provided with each aircraft. Other associated Government Furnished Equipment (GFE) such as the Fire Control Radar (FCR), Modernized Radar Frequency Interferometer (M-RFI), Radar Electronics Unit (REU), and Manned/Unmanned Teaming Extended Capability (MUMT-X) will be procured and provided in accordance with the basis of issue plan.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 5840A05133 / AH-64 Apache Block IIIB New Build

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*	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-10	A05133 / AH-64 Apache Block IIIB New Build			25 / 156.307	31 / 71.900	18 / 58.600	0 / -	- / -	0 / -
P-40	Total Gross/Weapon System Cost			25 / 156.307	31 / 71.900	18 / 58.600	0 / -	- / -	0 / -

*Title represents the P-10 Title for Advance Procurement.

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

Justification:
 The New Build program prior year funding includes Congressionally appropriated Overseas Contingency Operations (OCO) funding to procure New Build aircraft to fill aircraft shortages due to combat attrition and training loss. OCO funding does not provide advance procurement for long lead items for these aircraft.

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Exhibit P-10, Advance Procurement Requirements Analysis (page 1 - Budget Funding Justification): PB 2020 Army					Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build			P-5 Number / Title: A05133 / AH-64 Apache Block IIIB New Build	
First System (2020) Award Date: July 2009		First System (2020) Completion Date: November 2011		Interval Between Systems: 1 Months		
AH-64 Apache Block IIIB New Build		Production Leadtime <i>(Months)</i>	Prior Years <i>(Each)</i>	FY 2018 <i>(Each)</i>	FY 2019 <i>(Each)</i>	FY 2020 <i>(Each)</i>
Quantity			25	31	18	0
Cost Elements		When Required <i>(Months)</i>	Prior Years <i>(\$ M)</i>	FY 2018 <i>(\$ M)</i>	FY 2019 <i>(\$ M)</i>	FY 2020 <i>(\$ M)</i>
Other						
AH-64E Apache New Build		12	156.307	71.900	58.600	-
<i>Total: Other</i>			<i>156.307</i>	<i>71.900</i>	<i>58.600</i>	<i>-</i>
Total Advance Procurement/Obligation Authority			156.307	71.900	58.600	-

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Exhibit P-10, Advance Procurement Requirements Analysis (page 2 - Budget Funding Justification): PB 2020 Army						Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 5840A05133 / AH-64 Apache Block IIIB New Build				P-5 Number / Title: A05133 / AH-64 Apache Block IIIB New Build	
		FY 2020					
Cost Elements	QPA (Each)	Production Leadtime (Months)	Unit Cost (\$ K)	Contract Forecast Date	2020 Qty (Each)	For FY	Total Cost Request (\$ M)
Other							
AH-64E Apache New Build		-					-
<i>Total: Other</i>							-
Total Advance Procurement/Obligation Authority							-

Description:
 Currently the total lead time (time from when first materials must be committed to aircraft delivery) is in excess of 24 months. The Cost Assessment and Program Evaluation (CAPE) Independent Cost Estimate (ICE) utilized 18% to 22% for Advance Procurement (AP) for single year contracts. Each year's AP can be divided into 2 segments: 1) Government Furnished Equipment (GFE) such as engines, sensors and avionics and 2) Contractor Furnished Equipment (CFE). Material includes production components to support deliveries, provisioning material, pre-modification effort, and any potential termination liability costs. Long lead items include the Main Rotor Drive Shaft, Composite Main Rotor Blade, Improved Drive System, and Composite Stabilator.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6771AA0005 / UH-60 Blackhawk M Model (MYP)

ID Code (A=Service Ready, B=Not Service Ready): **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>)	934	57	58	73	-	73	36	24	33	28	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	16,207.866	1,254.529	1,239.408	1,523.103	-	1,523.103	826.318	712.255	853.706	783.018	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	3,925.105	172.486	80.587	111.563	-	111.563	81.488	87.427	146.068	68.147	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	12,282.761	1,082.043	1,158.821	1,411.540	-	1,411.540	744.830	624.828	707.638	714.871	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	4,099.212	86.295	106.150	79.572	-	79.572	87.427	146.068	68.147	92.494	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	16,381.973	1,168.338	1,264.971	1,491.112	-	1,491.112	832.257	770.896	775.785	807.365	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	17,353.176	22,009.281	21,369.103	20,864.425	-	20,864.425	22,953.278	29,677.292	25,869.879	27,964.929	Continuing	Continuing

Description:

The UH-60M Black Hawk Helicopter serves as the Army's utility helicopter for the near and midterm force and is in line with the Army's Modernization Strategy, the National Military Strategy, and the National Defense Strategy. The UH-60M Black Hawk is a digital networked platform with greater range and lift to support maneuver Commanders through air assault, general support command and control, and aeromedical evacuation. Full rate production for this new build helicopter began in 2007. The current UH-60 Army Acquisition Objective (AAO) is 2,135 which will be obtained by procuring a combination 1375 UH-60M and 760 UH-60L to UH-60V conversion models. The UH-60M Black Hawk, with the integrated Medical Evacuation (MEDEVAC) Mission Equipment Package (MEP) kit, provides day/night and adverse weather emergency evacuation of casualties. The integration of the MEDEVAC MEP into the UH-60M changes the nomenclature to HH-60M.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	23	30	9	-	9	13	-	-	-
Total Obligation Authority	469.942	650.331	218.538	-	218.538	316.545	-	-	-
ANG	34	28	64	-	64	23	24	33	28
Total Obligation Authority	698.396	614.640	1,272.574	-	1,272.574	515.712	770.896	775.785	807.365
Total:	57	58	73	-	73	36	24	33	28
Secondary Distribution	1,168.338	1,264.971	1,491.112	-	1,491.112	832.257	770.896	775.785	807.365

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6771AA0005 / UH-60 Blackhawk M Model (MYP)

ID Code (A=Service Ready, B=Not Service Ready): **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	A05002 / UH-60 BLACK HAWK (MYP)				934 / 16,207.866	57 / 1,254.529	58 / 1,239.408	73 / 1,523.103	- / -	73 / 1,523.103
P-40	Total Gross/Weapon System Cost				934 / 16,207.866	57 / 1,254.529	58 / 1,239.408	73 / 1,523.103	- / -	73 / 1,523.103

*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 2020 Base procurement dollars in the amount of \$1491.112 million supports procurement of 73 aircraft (58 UH-60M and 15 HH-60M).

Note: The FY 2018 total obligation authority should be shown as \$1,181.325 million and supports procurement of 57 aircraft (42 UH-60M and 15 HH-60M).

Note: The multi-year 9 contract versus 5 single year contracts for FY 2017 through FY 2021 is projected to yield a 15.4% cost avoidance (\$638.292 million).

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

Two additional aircraft in FY15 and three additional aircraft in FY16 were procured as a result of the Black Hawk Exchange and Sales Team (BEST) program. This program avoids demilitarization and divestment cost and applies proceeds from the divestiture of non-excess obsolete H-60 aircraft towards the procurement of replacement H-60M aircraft in accordance with 40 U.S.C. 503 and AR725-1 as approved by the Army Acquisition Executive (AAE).

Four UH-60M aircraft were procured utilizing proceeds from the BEST program reprogrammed to FY17 funding on the A05002 funding line.

One UH-60M aircraft will be procured utilizing proceeds from the BEST program reprogrammed to FY18 funding on the A05002 funding line.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6771AA0005 / UH-60 Blackhawk M Model (MYP)	Item Number / Title [DODIC]: A05002 / UH-60 BLACK HAWK (MYP)

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)				934	57	58	73	-	73
Gross/Weapon System Cost (\$ in Millions)				16,207.866	1,254.529	1,239.408	1,523.103	-	1,523.103
Less PY Advance Procurement (\$ in Millions)				3,925.105	172.486	80.587	111.563	-	111.563
Net Procurement (P-1) (\$ in Millions)				12,282.761	1,082.043	1,158.821	1,411.540	-	1,411.540
Plus CY Advance Procurement (\$ in Millions)				4,099.212	86.295	106.150	79.572	-	79.572
Total Obligation Authority (\$ in Millions)				16,381.973	1,168.338	1,264.971	1,491.112	-	1,491.112
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (\$ in Millions)				-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)				17,353.176	22,009.281	21,369.103	20,864.425	-	20,864.425

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																		
Airframes/CFE	11,822.005	938	11,089.041	14,706.193	57	838.253	15,554.431	58	902.157	15,043.808	73	1,098.198	-	-	-	15,043.808	73	1,098.198
Engines/Accessories	704.844	1,876	1,322.288	768.447	114	87.603	767.233	116	88.999	809.589	146	118.200	-	-	-	809.589	146	118.200
Avionics (GFE)	-	-	625.255	-	-	38.561	-	-	40.824	-	-	62.085	-	-	-	-	-	62.085
Other GFE	-	-	361.854	-	-	17.606	-	-	19.170	-	-	24.874	-	-	-	-	-	24.874
Subtotal: Recurring Cost	-	-	13,398.437	-	-	982.023	-	-	1,051.150	-	-	1,303.357	-	-	-	-	-	1,303.357
Non Recurring Cost																		
ECO (All FLYAWAY Components)	-	-	381.200	-	-	92.389	-	-	31.154	-	-	48.810	-	-	-	-	-	48.810
Other Costs (Mission Equipment)	-	-	700.737	-	-	32.545	-	-	34.341	-	-	34.842	-	-	-	-	-	34.842
Tooling Equipment	-	-	99.255	-	-	0.230	-	-	0.153	-	-	0.031	-	-	-	-	-	0.031
Other Nonrecurring Cost	-	-	85.100	-	-	0.985	-	-	1.023	-	-	1.463	-	-	-	-	-	1.463
Subtotal: Non Recurring Cost	-	-	1,266.292	-	-	126.149	-	-	66.671	-	-	85.146	-	-	-	-	-	85.146
Subtotal: Flyaway Cost	-	-	14,664.729	-	-	1,108.172	-	-	1,117.821	-	-	1,388.503	-	-	-	-	-	1,388.503
Support - Data Cost																		
Technical Publications	-	-	31.640	-	-	3.627	-	-	3.705	-	-	3.801	-	-	-	-	-	3.801
Subtotal: Support - Data Cost	-	-	31.640	-	-	3.627	-	-	3.705	-	-	3.801	-	-	-	-	-	3.801
Support - Fielding Cost																		
Fielding	-	-	681.343	-	-	59.250	-	-	59.375	-	-	69.684	-	-	-	-	-	69.684

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6771AA0005 / UH-60 Blackhawk M Model (MYP)	Item Number / Title [DODIC]: A05002 / UH-60 BLACK HAWK (MYP)
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)
<i>Subtotal: Support - Fielding Cost</i>	-	-	681.343	-	-	59.250	-	-	59.375	-	-	69.684	-	-	-	-	-	69.684
Support - Program Management Cost																		
Government Management	-	-	422.963	-	-	43.642	-	-	24.447	-	-	28.014	-	-	-	-	-	28.014
<i>Subtotal: Support - Program Management Cost</i>	-	-	422.963	-	-	43.642	-	-	24.447	-	-	28.014	-	-	-	-	-	28.014
Support - Training Cost																		
Equipment	-	-	407.190	-	-	39.838	-	-	34.060	-	-	33.101	-	-	-	-	-	33.101
<i>Subtotal: Support - Training Cost</i>	-	-	407.190	-	-	39.838	-	-	34.060	-	-	33.101	-	-	-	-	-	33.101
Gross/Weapon System Cost	17,353.176	934	16,207.866	22,009.281	57	1,254.529	21,369.103	58	1,239.408	20,864.425	73	1,523.103	-	-	-	20,864.425	73	1,523.103

Remarks:

FY 2018 ECO includes Congressional Plus Up of \$62 million.

FY 2020 Fielding increase accelerates divestment of H-60A helicopters from the Army inventory.

Core Civilian Manpower was moved to a separate Acquisition O&M funding line in FY 2019 reducing the Support - Program Management Cost requirement for A05002 UH-60 Black Hawk (MYP) funding line.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	23	30	9	-	9
	Total Obligation Authority	469.942	650.331	218.538	-	218.538
ANG	Quantity	34	28	64	-	64
	Total Obligation Authority	698.396	614.640	1,272.574	-	1,272.574
Total: Secondary Distribution	Quantity	57	58	73	-	73
	Total Obligation Authority	1,168.338	1,264.971	1,491.112	-	1,491.112

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2020 Army							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary					P-1 Line Item Number / Title: 6771AA0005 / UH-60 Blackhawk M Model (MYP)						
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
Gross/Weapon System Cost (<i>\$ in Millions</i>)	4,099.212	86.295	106.150	79.572	-	79.572	87.427	146.068	68.147	92.494	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	4,099.212	86.295	106.150	79.572	-	79.572	87.427	146.068	68.147	92.494	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	4,099.212	86.295	106.150	79.572	-	79.572	87.427	146.068	68.147	92.494	Continuing	Continuing

Description:

The Advance Procurement for the UH-60 Black Hawk contains funding for the airframe and engine contracts as well as funding for Government Furnished Equipment (GFE) to support the UH-60 aircraft and mission kit production. GFE (in addition to the engine) currently requiring advance procurement includes numerous communication, navigation, and Aircraft Survivability Equipment items procured by the Communications and Electronics Command (CECOM).

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2020 Army	Date: March 2019
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Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary	P-1 Line Item Number / Title: 6771AA0005 / UH-60 Blackhawk M Model (MYP)
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Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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*	ID CD	MDAP/MAIS Code	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>	Quantity / Total Cost <i>(Each) / (\$ M)</i>
P-10	A05002 / UH-60 BLACK HAWK (MYP)			934 / 4,099.212	57 / 86.295	58 / 106.150	73 / 79.572	- / -	73 / 79.572
P-40	Total Gross/Weapon System Cost			934 / 4,099.212	57 / 86.295	58 / 106.150	73 / 79.572	- / -	73 / 79.572

*Title represents the P-10 Title for Advance Procurement.

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

Justification:

UNCLASSIFIED

Exhibit P-10, Advance Procurement Requirements Analysis (page 1 - Budget Funding Justification): PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20			P-1 Line Item Number / Title: 6771AA0005 / UH-60 Blackhawk M Model (MYP)			P-5 Number / Title: A05002 / UH-60 BLACK HAWK (MYP)	
First System (2020) Award Date: May 2005		First System (2020) Completion Date: June 2006			Interval Between Systems: 18 Months		
UH-60 BLACK HAWK (MYP)		Production Leadtime <i>(Months)</i>	Prior Years <i>(Each)</i>	FY 2018 <i>(Each)</i>	FY 2019 <i>(Each)</i>	FY 2020 <i>(Each)</i>	
Quantity			934	57	58	73	
Cost Elements		When Required <i>(Months)</i>	Prior Years <i>(\$ M)</i>	FY 2018 <i>(\$ M)</i>	FY 2019 <i>(\$ M)</i>	FY 2020 <i>(\$ M)</i>	
Other							
Prior Year		-	2,531.426	-	-	-	
CFE Airframe		6	777.942	28.576	35.500	25.893	
Auxiliary Power Unit		3	37.856	2.941	3.600	2.735	
Engines		3	586.770	45.269	55.410	42.100	
EGI		3	91.324	7.301	8.937	6.790	
Heads Up Display AVS-7		3	29.284	2.208	2.703	2.054	
Hover Infrared Suppressor		1	28.959	-	-	-	
Miscellaneous		1	15.651	-	-	-	
<i>Total: Other</i>			4,099.212	86.295	106.150	79.572	
Total Advance Procurement/Obligation Authority			4,099.212	86.295	106.150	79.572	

UNCLASSIFIED

Exhibit P-10, Advance Procurement Requirements Analysis (page 2 - Budget Funding Justification): PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6771AA0005 / UH-60 Blackhawk M Model (MYP)	P-5 Number / Title: A05002 / UH-60 BLACK HAWK (MYP)
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Cost Elements	QPA <i>(Each)</i>	FY 2020					Total Cost Request <i>(\$ M)</i>
		Production Leadtime <i>(Months)</i>	Unit Cost <i>(\$ K)</i>	Contract Forecast Date	2020 Qty <i>(Each)</i>	For FY	
Other							
Prior Year	-						-
CFE Airframe	1						25.893
Auxiliary Power Unit	1						2.735
Engines	2						42.100
EGI	2						6.790
Heads Up Display AVS-7	1						2.054
Hover Infrared Suppressor	-						-
Miscellaneous	-						-
<i>Total: Other</i>							79.572
Total Advance Procurement/Obligation Authority							79.572

Description:
N/A

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6773A05009 / UH-60 Black Hawk L and V Models

ID Code (A=Service Ready, B=Not Service Ready): **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>)	1,083	35	18	25	-	25	24	36	36	38	-	1,295
Gross/Weapon System Cost (<i>\$ in Millions</i>)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	9,436.458	2,186.171	8,229.889	6,771.600	-	6,771.600	7,207.042	4,823.167	4,851.556	4,033.342	-	8,716.721

Description:

UH-60 A and L Models include UH-60 A to L conversions in FY16 through FY18 and UH-60L Digital, now designated as UH-60V. Production for UH-60V began in FY18. The UH-60 BLACKHAWK helicopter is the Army's utility helicopter for the near and midterm force. It is a twin engine, single rotor, four bladed utility helicopter used for air assault, general support, command & control, and aero-medical evacuations (MEDEVAC). The UH-60 is joint force capable, providing 24 hour/day support including operations at night and in adverse weather conditions. The UH-60 is designed to carry a crew of four plus eleven combat equipped troops or an external load up to 9,000 pounds. The UH-60 BLACK HAWK was fielded in 1978 as a replacement for the UH-1. From 1978 to 1988, UH-60As were produced. In 1989 production of UH-60Ls with improved engines and drive train began. In 2007, full rate production of UH-60Ms began which provided a digital cockpit, digital Flight Management System (FMS), improved engine, and wide-cord main rotor blades. The UH-60V provides an integrated digital map, integrated performance planning, common functionality and commonality of training with UH-60M.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	35	8	2	-	2	13	10	-	2
	Total Obligation Authority	0.000	65.839	13.543	-	13.543	93.692	48.232	-	8.067
ANG	Quantity	-	10	23	-	23	11	26	36	36
	Total Obligation Authority	76.516	82.299	155.747	-	155.747	79.277	125.402	174.656	145.200
Total: Secondary Distribution	Quantity	35	18	25	-	25	24	36	36	38
	Total Obligation Authority	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6773A05009 / UH-60 Black Hawk L and V Models

ID Code (A=Service Ready, B=Not Service Ready): **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-3a	A05009 / UH-60 A and L Models (A05009) (Operational)				1,083 / 10,219.684	35 / 76.516	18 / 148.138	25 / 169.290	- / -	25 / 169.290
P-40	Total Gross/Weapon System Cost				1,083 / 10,219.684	35 / 76.516	18 / 148.138	25 / 169.290	- / -	25 / 169.290

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A05009 / UH-60 A and L Models (A05009) (Operational)				24 / 172.969	36 / 173.634	36 / 174.656	38 / 153.267	- / -	1,295 / 11,288.154
P-40	Total Gross/Weapon System Cost				24 / 172.969	36 / 173.634	36 / 174.656	38 / 153.267	- / -	1,295 / 11,288.154

*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:
 FY20 base procurement dollars in the amount of \$169.290 million will procure 25 UH-60Vs. The UH-60 A to L conversion program expands the current UH-60 A to A recapitalization/rebuild program to a UH-60 A to L recapitalization/rebuild program. Effective in FY16, all A to L conversions and UH-60V conversions will be procured under this line, A05009. Prior to FY16 the funding for UH-60 A to L conversions was utilized under Black Hawk Modifications line AA0492.

The current H-60 Black Hawk Army Acquisition Objective (AAO) is 2135 which is obtained by procuring a combination of 1,375 new 60M and 760 Recapitalized (A/LV) aircraft.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6773A05009 / UH-60 Black Hawk L and V Models	Modification Number / Title: A05009 / UH-60 A and L Models (A05009)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	1,083	35	18	25	-	25	24	36	36	38	-	1,295
Gross/Weapon System Cost (<i>\$ in Millions</i>)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154

(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>)	9,436.458	2,186.171	8,229.889	6,771.600	-	6,771.600	7,207.042	4,823.167	4,851.556	4,033.342	-	8,716.721

Description:

UH-60 A and L Models includes UH-60 A to L conversions and the UH-60L Digital conversions, now designated as UH-60V.

UH-60V aircraft cost includes all digital components and their associated cost, as well as Engineering Changes, Systems Engineering and Program Management, Trainers, Data and Fielding.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	35	8	2	-	2	13	10	-	2
Total Obligation Authority	0.000	65.839	13.543	-	13.543	93.692	48.232	-	8.067
ANG	-	10	23	-	23	11	26	36	36
Total Obligation Authority	76.516	82.299	155.747	-	155.747	79.277	125.402	174.656	145.200
Total:	35	18	25	-	25	24	36	36	38
Secondary Distribution	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267

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Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20				P-1 Line Item Number / Title: 6773A05009 / UH-60 Black Hawk L and V Models						Modification Number / Title: A05009 / UH-60 A and L Models (A05009)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UH-60 A and L				Modification Type: Operational				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 2:</i> UH-60A to UH-60L Conversions													
A Kits													
Recurring													
Other	1,083 / 10,219.684	29 / 37.763	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	1,112 / 10,257.447	
<i>Subtotal: Recurring</i>	1,083 / 10,219.684	29 / 37.763	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,112 / 10,257.447	
<i>Subtotal: UH-60A to UH-60L Conversions</i>	1,083 / 10,219.684	29 / 37.763	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	1,112 / 10,257.447	
<i>Modification Item 2 of 2:</i> UH-60V													
A Kits													
Recurring													
Other	- / -	6 / 30.855	18 / 133.001	25 / 149.898	- / -	25 / 149.898	24 / 155.090	36 / 152.915	36 / 153.523	38 / 130.513	- / 0.000	183 / 905.795	
<i>Subtotal: Recurring</i>	- / -	6 / 30.855	18 / 133.001	25 / 149.898	- / -	25 / 149.898	24 / 155.090	36 / 152.915	36 / 153.523	38 / 130.513	- / -	183 / 905.795	
<i>Subtotal: UH-60V</i>	- / -	6 / 30.855	18 / 133.001	25 / 149.898	- / -	25 / 149.898	24 / 155.090	36 / 152.915	36 / 153.523	38 / 130.513	- / -	183 / 905.795	
<i>Subtotal: Procurement, All Modification Items</i>	1,083 / 10,219.684	35 / 68.618	18 / 133.001	25 / 149.898	- / -	25 / 149.898	24 / 155.090	36 / 152.915	36 / 153.523	38 / 130.513	- / -	1,295 / 11,163.242	
Installation													
<i>Modification Item 1 of 2:</i> UH-60A to UH-60L Conversions	1,083 / 0.000	29 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,112 / 0.000	
<i>Modification Item 2 of 2:</i> UH-60V	- / -	6 / 7.898	18 / 15.137	25 / 19.392	- / -	25 / 19.392	24 / 17.879	36 / 20.719	36 / 21.133	38 / 22.754	- / -	183 / 124.912	
<i>Subtotal: Installation</i>	1,083 / 0.000	35 / 7.898	18 / 15.137	25 / 19.392	- / -	25 / 19.392	24 / 17.879	36 / 20.719	36 / 21.133	38 / 22.754	- / -	1,295 / 124.912	
Total													
Total Cost (Procurement + Support + Installation)	10,219.684	76.516	148.138	169.290	-	169.290	172.969	173.634	174.656	153.267	-	11,288.154	

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6773A05009 / UH-60 Black Hawk L and V Models	Modification Number / Title: A05009 / UH-60 A and L Models (A05009)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 2: UH-60A to UH-60L Conversions

Manufacturer Information

Manufacturer Name: Corpus Christi Army Depot	Manufacturer Location: Corpus Christi Army Depot
Administrative Leadtime (in Months):	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: Depot

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1,056 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,056 / 0.000
FY 2018	27 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	27 / 0.000
FY 2019	0 / 0.000	29 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	29 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1,083 / 0.000	29 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,112 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	63	8	8	8	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92
Out	36	6	7	7	7	8	8	8	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6773A05009 / UH-60 Black Hawk L and V Models	Modification Number / Title: A05009 / UH-60 A and L Models (A05009)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 2: UH-60V

Manufacturer Information

Manufacturer Name: Prototype Integration Facility/Northrop Grumman/CCAD	Manufacturer Location: Huntsville AL/ Woodland Hills CA/Corpus Christi TX
Administrative Leadtime (in Months): 1	Production Leadtime (in Months): 12

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Oct 2017	Oct 2018	Oct 2019	Oct 2020	Oct 2021	Oct 2022	Oct 2023
Delivery Dates	Oct 2018	Oct 2019	Oct 2020	Oct 2021	Oct 2022	Oct 2023	Oct 2024

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	6 / 7.898	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 7.898
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	- / -	- / -	18 / 15.137	25 / 19.392	- / -	25 / 19.392	- / -	- / -	- / -	- / -	- / -	43 / 34.529
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	24 / 17.879	- / -	- / -	- / -	- / -	24 / 17.879
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	36 / 20.719	- / -	- / -	- / -	36 / 20.719
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	36 / 21.133	- / -	- / -	36 / 21.133
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 22.754	- / -	38 / 22.754
Total	- / -	6 / 7.898	18 / 15.137	25 / 19.392	- / -	25 / 19.392	24 / 17.879	36 / 20.719	36 / 21.133	38 / 22.754	- / -	183 / 124.912

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	3	3	4	4	4	6	6	6	6	7	6	6	6	6	9	9	9	9	9	9	9	9	9	9	10	10	574	757
Out	-	-	-	-	-	-	-	3	3	4	4	4	6	6	6	6	7	6	6	6	6	9	9	9	9	9	9	9	9	612	757

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6775A05101 / CH-47 Helicopter

ID Code (A=Service Ready, B=Not Service Ready): **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>)	343	14	7	8	1	9	7	6	6	6	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9,654.877	447.683	137.098	161.068	25.000	186.068	204.114	165.913	183.497	194.163	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	639.705	8.707	17.820	20.778	-	20.778	18.186	18.372	18.559	18.749	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	9,015.172	438.976	119.278	140.290	25.000	165.290	185.928	147.541	164.938	175.414	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	648.412	17.820	20.778	18.186	-	18.186	18.372	18.559	18.749	18.936	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	9,663.584	456.796	140.056	158.476	25.000	183.476	204.300	166.100	183.687	194.350	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	28,148.329	31,977.357	19,585.429	20,133.500	25,000.000	20,674.222	29,159.143	27,652.167	30,582.833	32,360.500	Continuing	Continuing

Description:

The CH-47F Chinook is a twin-turbine, tandem-rotor, heavy-lift transport helicopter with a useful load of up to 25,000 pounds. As the Army's only heavy lift helicopter, the CH-47F Improved Cargo helicopter is an essential component of the Army's Multi-Domain Battle framework. The CH-47F and MH-47G helicopters perform over 95% of the Army's heavy lift missions up to 25,000 pounds. The Chinook fleet has multiple missions including: transport troops (air assault), supply and resupply, weapons, equipment and other cargo operations. Operating throughout theater in combat, combat support, and combat service support roles. The CH-47F is vital to Overseas Contingency Operations and Homeland Security needs of our nation. Secondary missions include medical evacuation, aircraft recovery, parachute drops, disaster relief, and search and rescue. These aircraft are fielded to heavy lift companies contained within Combat Aviation Brigades and Special Operations Aviation. The CH-47F and MH-47G aircraft is expected to remain the Army's heavy lift helicopter for the next several decades. To maintain the Chinook the Army's only heavy-lift cargo helicopter, the CH-47F Block II program will insert critical and affordable technologies into the Chinook fleet to affordably maintain the platform's operational capabilities while continuing to meet the Warfighter requirements. Key improvements include the Advanced Chinook Rotor Blade, upgraded transmissions and rotor heads, and strengthened airframe to increase payload across the full spectrum of operational environments. Other improvements include an upgraded electrical system and higher capacity fuel tanks along with aircraft software updates.

The CH-47F Block I ReNew and New Build programs rebuild or replace the CH-47D aircraft for the conventional Army fleet and 69 Special Operations Aircraft to the Block I configurations. The CH-47F PM is fielding and training Combat Aviation Brigades (CABs), NG/USAR units using a New Equipment Training team.

PM Cargo procurement lines provide the common portion of funding for the Special Operations Aircraft, MH-47G. CH-47F Block II Product Office, in conjunction with Technology applications Project Office (TAPO), is replacing the aging fleet of MH-47G aircraft that has airframe components dating back more than 45 years. The MH-47G program, while complementary to the Block II program, is a separately managed Technology Applications Project Office (TAPO) ARSOAC program with a stand-alone Acquisition Strategy. The current Army Acquisition Objective (AAO) is 542 aircraft.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	14	7	8	1	9	7	6	6	6
	Total Obligation Authority	456.796	140.056	158.476	25.000	183.476	204.300	166.100	183.687	194.350
Total: Secondary Distribution	Quantity	14	7	8	1	9	7	6	6	6
	Total Obligation Authority	456.796	140.056	158.476	25.000	183.476	204.300	166.100	183.687	194.350

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6775A05101 / CH-47 Helicopter

ID Code (A=Service Ready, B=Not Service Ready): **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	A05008 / CH-47 NEW BUILD				189 / 5,202.541	10 / 368.236	- / -	- / -	1 / 25.000	1 / 25.000
P-5	A05105 / CH-47 SLEP	P-5a, P-21			154 / 4,452.336	4 / 79.447	7 / 137.098	8 / 161.068	- / -	8 / 161.068
P-40	Total Gross/Weapon System Cost				343 / 9,654.877	14 / 447.683	7 / 137.098	8 / 161.068	1 / 25.000	9 / 186.068

*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 2020 Base procurement dollars in the amount of \$158.476 million supports Army common material funding for 8 MH-47G variant ReNew aircraft.
 FY 2020 OCO procurement dollars in the amount of \$25.0 million supports Army common material funding for 1 MH-47G variant War Replacement aircraft.
 Note: P-1 OCO quantity is in error. P-40 OCO quantity is correct.
 In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	Item Number / Title [DODIC]: A05008 / CH-47 NEW BUILD

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (<i>Units in Each</i>)	189	10	-	-	1	1
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5,202.541	368.236	-	-	25.000	25.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	32.759	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5,169.782	368.236	-	-	25.000	25.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	32.759	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5,202.541	368.236	-	-	25.000	25.000

(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>)	27,526.672	36,823.600	-	-	25,000.000	25,000.000

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																		
Airframes/CFE	20,253.513	189	3,827.914	35,972.500	6	215.835	-	-	-	-	-	-	-	-	-	-	-	-
Engine/Accessories	1,448.217	350	506.876	975.000	12	11.700	-	-	-	-	-	-	-	-	-	-	-	-
CFE Avionics	-	-	184.201	-	-	9.300	-	-	-	-	-	-	-	-	-	-	-	-
GFE	-	-	351.104	-	-	8.600	-	-	-	-	-	-	-	-	-	-	-	-
ECO (Flyaway)	-	-	79.613	-	-	2.900	-	-	-	-	-	-	-	-	-	-	-	-
Nonrecurring/SEPM/ FDT	-	-	141.410	-	-	8.900	-	-	-	-	-	-	-	-	-	-	-	-
PSE	-	-	21.119	-	-	0.900	-	-	-	-	-	-	-	-	-	-	-	-
Publications/Tech Data	-	-	8.325	-	-	0.400	-	-	-	-	-	-	-	-	-	-	-	-
ECO (Support Items)	-	-	3.653	-	-	0.600	-	-	-	-	-	-	-	-	-	-	-	-
Post Deployment Software Support	-	-	75.762	-	-	8.100	-	-	-	-	-	-	-	-	-	-	-	-
Initial Spares	-	-	2.564	-	-	1.001	-	-	-	-	-	-	-	-	-	-	-	-
Airframes/CFE MH-47G SOA Aircraft (Army Common)	-	-	-	25,000.000	4	100.000	-	-	-	-	-	-	25,000.000	1	25.000	25,000.000	1	25.000
<i>Subtotal: Recurring Cost</i>	-	-	<i>5,202.541</i>	-	-	<i>368.236</i>	-	-	-	-	-	<i>0.000</i>	-	-	<i>25.000</i>	-	-	<i>25.000</i>
<i>Subtotal: Flyaway Cost</i>	-	-	<i>5,202.541</i>	-	-	<i>368.236</i>	-	-	-	-	-	<i>0.000</i>	-	-	<i>25.000</i>	-	-	<i>25.000</i>
Gross/Weapon System Cost	27,526.672	189	5,202.541	36,823.600	10	368.236	-	-	-	-	-	-	25,000.000	1	25.000	25,000.000	1	25.000

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Exhibit P-5, Cost Analysis: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	Item Number / Title [DODIC]: A05008 / CH-47 NEW BUILD
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	10	-	0	1	1
	Total Obligation Authority	368.236	-	0.000	25.000	25.000
Total: Secondary Distribution	Quantity	10	-	-	1	1
	Total Obligation Authority	368.236	-	-	25.000	25.000

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	Item Number / Title [DODIC]: A05105 / CH-47 SLEP

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Procurement Quantity (Units in Each)	154	4	7	8	-	8
Gross/Weapon System Cost (\$ in Millions)	4,452.336	79.447	137.098	161.068	-	161.068
Less PY Advance Procurement (\$ in Millions)	606.946	8.707	17.820	20.778	-	20.778
Net Procurement (P-1) (\$ in Millions)	3,845.390	70.740	119.278	140.290	-	140.290
Plus CY Advance Procurement (\$ in Millions)	615.653	17.820	20.778	18.186	-	18.186
Total Obligation Authority (\$ in Millions)	4,461.043	88.560	140.056	158.476	-	158.476

(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)	28,911.273	19,861.750	19,585.429	20,133.500	-	20,133.500

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																		
CH-47D to CH-47F Conversion	28,862.916	154	4,444.889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MH-47G Block I to Block II Army Common Funding ^(†)	-	-	-	18,000.000	4	72.000	18,594.286	7	130.160	20,133.500	8	161.068	-	-	-	20,133.500	8	161.068
<i>Subtotal: Recurring Cost</i>	-	-	4,444.889	-	-	72.000	-	-	130.160	-	-	161.068	-	-	-	-	-	161.068
<i>Subtotal: Flyaway Cost</i>	-	-	4,444.889	-	-	72.000	-	-	130.160	-	-	161.068	-	-	-	-	-	161.068
Hardware Cost																		
Non Recurring Cost																		
CH-47 Block I to Block II	-	-	7.447	-	-	7.447	-	-	6.938	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	7.447	-	-	7.447	-	-	6.938	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	7.447	-	-	7.447	-	-	6.938	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	28,911.273	154	4,452.336	19,861.750	4	79.447	19,585.429	7	137.098	20,133.500	8	161.068	-	-	-	20,133.500	8	161.068

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	4	7	8	-	8
Total Obligation Authority	88.560	140.056	158.476	-	158.476
Total:	4	7	8	-	8

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Exhibit P-5, Cost Analysis: PB 2020 Army			Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter		Item Number / Title [DODIC]: A05105 / CH-47 SLEP		
ID Code (A=Service Ready, B=Not Service Ready) :			MDAP/MAIS Code:			
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Secondary Distribution	Total Obligation Authority	88.560	140.056	158.476	-	158.476

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	Item Number / Title [DODIC]: A05105 / CH-47 SLEP
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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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
MH-47G Block I to Block II Army Common Funding ^(†)		2018	Boeing / Philadelphia PA	SS / CPFF	Fort Eustis	Jul 2018	Aug 2020	4	18,000.000	Y		Nov 2016
MH-47G Block I to Block II Army Common Funding ^(†)		2019	Boeing / Philadelphia PA	SS / CPFF	Fort Eustis	Jul 2019	Aug 2021	7	18,594.286	Y		Nov 2016
MH-47G Block I to Block II Army Common Funding ^(†)		2020	Boeing / Philadelphia PA	SS / CPFF	Fort Eustis	Jul 2020	Aug 2022	8	20,133.500	Y		Nov 2016

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20 **P-1 Line Item Number / Title:** 6775A05101 / CH-47 Helicopter **Item Number / Title [DODIC]:** A05105 / CH-47 SLEP

Cost Elements <i>(Units in Each)</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
MH-47G Block I to Block II Army Common Funding																															
	1	2018	ARMY	4	0	4												A	-	-	-	-	-	-	-	-	-	-	4		
	1	2019	ARMY	7	0	7																						A	-	-	7
	1	2020	ARMY	8	0	8																								8	
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20 **P-1 Line Item Number / Title:** 6775A05101 / CH-47 Helicopter **Item Number / Title [DODIC]:** A05105 / CH-47 SLEP

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
MH-47G Block I to Block II Army Common Funding																															
	1	2018	ARMY	4	0	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	1	2019	ARMY	7	0	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	0	
	1	2020	ARMY	8	0	8																								8	
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	Item Number / Title [DODIC]: A05105 / CH-47 SLEP
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022														Fiscal Year 2023														BALANCE	
O C C #	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					
MH-47G Block I to Block II Army Common Funding																																			
1		2018	ARMY	4	4	0																							0						
1		2019	ARMY	7	7	0																							0						
1		2020	ARMY	8	0	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4			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 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20		P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter
		Item Number / Title [DODIC]: A05105 / CH-47 SLEP

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	Boeing - Philadelphia PA	24	24	72	11	10	25	35	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 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, Advance Procurement Budget Line Item Justification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter
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Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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
Gross/Weapon System Cost (<i>\$ in Millions</i>)	648.412	17.820	20.778	18.186	-	18.186	18.372	18.559	18.749	18.936	Continuing	Continuing
Net Procurement (P-1) (<i>\$ in Millions</i>)	648.412	17.820	20.778	18.186	-	18.186	18.372	18.559	18.749	18.936	Continuing	Continuing
Total Obligation Authority (<i>\$ in Millions</i>)	648.412	17.820	20.778	18.186	-	18.186	18.372	18.559	18.749	18.936	Continuing	Continuing

Description:

The CH-47F Chinook is a twin-turbine, tandem-rotor, heavy lift transport helicopter with a useful load of up to 25,000 pounds.

To maintain the Chinook the Army's only heavy-lift cargo helicopter, the CH-47F Block II program will insert critical and affordable technologies into the Chinook fleet to affordably maintain the platform's operational capabilities while continuing to meet the Warfighter requirements. Key improvements include the Advanced Chinook Rotor Blade, upgraded transmissions and rotor heads, and strengthened airframes to increase payload across the full spectrum of operational environments. Other improvements include an upgraded electrical system and higher capacity fuel tanks along with aircraft software updates. The 11 September 2015 Program Delegation Acquisition Decision Memorandum (ADM) designated the CH-47F Block II as an Acquisition Category (ACAT) 1C program with the Milestone Decision Authority (MDA) delegated to the Secretary of the Army. The EMD Phase began in 2017 following the Milestone (MS) B decision in July 2017.

PM Cargo procurement lines provide the common portion of funding for the Special Operations Aircraft, MH-47G. CH-47F Block II in conjunction with Technology Applications Project Office (TAPO) is replacing the aging fleet of MH-47G aircraft that has airframe components dating back more than 45 years. The MH-47G program, while complementary to the Block II program, is a separately managed Technology Applications Project Office (TAPO) ARSOAC program with a stand-alone Acquisition Strategy. The current Army Acquisition Objective (AAO) is 542 aircraft.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 6775A05101 / CH-47 Helicopter

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*	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-10	A05105 / CH-47 SLEP			154 / 615.653	4 / 17.820	7 / 20.778	8 / 18.186	- / -	8 / 18.186
P-40	Total Gross/Weapon System Cost			343 / 648.412	14 / 17.820	7 / 20.778	8 / 18.186	1 / -	9 / 18.186

*Title represents the P-10 Title for Advance Procurement.

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

Justification:

FY 2020 Advanced procurement dollars in the amount of \$18.186 million will procure the MH-47G common portion of the airframe advance procurement requirement.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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Exhibit P-10, Advance Procurement Requirements Analysis (page 1 - Budget Funding Justification): PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	P-5 Number / Title: A05105 / CH-47 SLEP
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First System (2020) Award Date: December 2003	First System (2020) Completion Date: December 2006	Interval Between Systems: 2 Months
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CH-47 SLEP	Production Leadtime <i>(Months)</i>	Prior Years <i>(Each)</i>	FY 2018 <i>(Each)</i>	FY 2019 <i>(Each)</i>	FY 2020 <i>(Each)</i>
Quantity		154	4	7	8

Cost Elements	When Required <i>(Months)</i>	Prior Years <i>(\$ M)</i>	FY 2018 <i>(\$ M)</i>	FY 2019 <i>(\$ M)</i>	FY 2020 <i>(\$ M)</i>
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CFE					
Avionics	16	269.947	7.128	8.311	7.274
Airframe	14	345.706	10.692	12.467	10.912
<i>Total: CFE</i>		<i>615.653</i>	<i>17.820</i>	<i>20.778</i>	<i>18.186</i>
Total Advance Procurement/Obligation Authority		615.653	17.820	20.778	18.186

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Exhibit P-10, Advance Procurement Requirements Analysis (page 2 - Budget Funding Justification): PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 01 / 20	P-1 Line Item Number / Title: 6775A05101 / CH-47 Helicopter	P-5 Number / Title: A05105 / CH-47 SLEP
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Cost Elements	QPA <i>(Each)</i>	FY 2020					Total Cost Request <i>(\$ M)</i>
		Production Leadtime <i>(Months)</i>	Unit Cost <i>(\$ K)</i>	Contract Forecast Date	2020 Qty <i>(Each)</i>	For FY	
CFE							
Avionics	1						7.274
Airframe	1						10.912
Total: CFE							18.186
Total Advance Procurement/Obligation Authority							18.186

Description:
N/A

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 01: Aircraft / BSA 20: Rotary **P-1 Line Item Number / Title:** 9990A19900 / Spectrum Army SUAS

ID Code (A=Service Ready, B=Not Service Ready): **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>)	15.808	14.921	-	-	-	-	-	-	-	-	-	30.729
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	15.808	14.921	-	-	-	-	-	-	-	-	-	30.729
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	15.808	14.921	-	-	-	-	-	-	-	-	-	30.729

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Commercial Spectrum Enhancement Act (CSEA) Title II, Public Law 108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the costs associated with relocating communication systems from spectrum bands which were auctioned for commercial purposes.

- The SRF is funded with proceeds from Federal Communications Commission (FCC) conducted auctions of spectrum licenses.
- SRF funds have an indefinite obligation period and remain available until expended (X Year).
- The Department of Defense (DoD) Information Officer (CIO) executes oversight of the DoD spectrum relocation and sharing efforts.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	14.921	-	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	14.921	-	-	-	-	-	-	-	-

Justification:

Manned Unmanned Teaming provides Apache Block AH-64 attack helicopters the ability to display real time sensor video from UAS sensors, battlefield sensors or onboard sensor video to the Apache Aircrews. The use of the onboard or off-board sensor video by the warfighter dramatically reduces engagement timelines and increases situational awareness.

The budget request for Spectrum Army Small Unmanned Aerial Systems (SUAS) will fund the Manned/Unmanned teaming with the change in Small UAS frequency which encompasses a wide range of activity including modification, integration, testing, and production of MUUMT-X, MUUMT-2 and ROVER 6 radios.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 0023A01001 / MQ-1 Payload (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	278.801	70.510	0.000	-	-	-	-	-	-	-	-	349.311
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	278.801	70.510	0.000	-	-	-	-	-	-	-	-	349.311
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	278.801	70.510	0.000	-	-	-	-	-	-	-	-	349.311

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	3,359.048	4,147.647	-	-	-	-	-	-	-	-	-	3,493.110

Description:

Funds in this program were realigned beginning in FY2015 from the shared MQ-1 Payload-UAS funding line (SSN A00020) for more efficient, effective program management. The funds were realigned into a new shared parent SSN, MQ-1 Payloads (MIP) (SSN A01001), which includes the MQ-1 sensor payloads: Synthetic Aperture Radar/Moving Target Indicator (SAR/MTI) (SSN A01003), Signal Intelligence (SIGINT) (SSN A01004), and Common Sensor Payload Full Motion Video (CSP FMV) (SSN A01005).

MQ-1 Payload (MIP) (A01001) budget line is shared between multiple Payload programs and two Program Managers. These Payload programs support the Army's transformation by procuring Reconnaissance, Surveillance and Target Acquisition (RSTA) and Intelligence, Surveillance and Reconnaissance (ISR) payload systems for Brigade Combat Teams, Divisions, and Corps Unmanned Aircraft Systems (UAS). This is in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) UAS priorities. Common Sensor Payload (CSP), Small Tactical Radar - Lightweight (STARLite), and Tactical Signals Intelligence (SIGINT) Payload (TSP) are principal payloads for the Gray Eagle UAS. The Army Acquisition Objective (AAO) for STARLite and CSP is equivalent to aircraft/platform quantities, one system per Gray Eagle UAS - AAO is commensurate with aircraft quantity (one STARLite and one CSP payload per aircraft). The AAO for TSP is 112 systems.

Common Sensor Payload (CSP) Electro Optical / Infra Red / Laser Designator (EO/IR/LD) provides High Definition (HD) Full Motion Video (FMV) in both the Electro Optical and Mid Wave IR spectrums with day/night capability to collect and display continuous imagery and the ability to designate targets of interest for attack by laser guided precision weapons. It is the EO/IR/LD sensor for the Gray Eagle UAS which supports force applications, battlespace awareness, force protection, and net-centric operations across the battlefield to provide wide area, near real time RSTA capabilities. Current product improvements continue to focus on the development and implementation of technologies that directly supporting emerging requirements of the Army's Current and Future Force.

Small Tactical Radar - Lightweight (STARLite) SAR/MTI is a lightweight, high performance, all weather, multi-functional radar system for the Gray Eagle Unmanned Aircraft System (UAS). The STARLite system provides wide area, near real time RSTA capabilities. It operates throughout the UAS flight mission profile in adverse weather and through battlefield obscurants. The SAR mode generates quality images for the battlefield commander for detection, classification and location of stationary commercial wheeled vehicle-size targets. The MTI mode detects moving ground targets, to include man-sized detection, and provides location information and performs cross-cue with the Electro-Optic/Infrared (EO/IR) sensors.

The Tactical Signals Intelligence (SIGINT) Payload (TSP) is a SIGINT sensor system for the Gray Eagle Unmanned Aircraft System (UAS) that detects radio frequency (RF) emitters. The TSP system provides a SIGINT capability to the tactical commander. The TSP system is a modular, scalable payload using an architecture that is software reconfigurable to allow for growth and flexibility as technology, and as the adversaries use of technology changes. This flexible architecture allows for third party software applications to be integrated into the TSP system. The TSP system processing, control and data dissemination is integrated into the Distributed Common Ground System - Army (DCGS-A) via the Operational Ground Station. It supports Manned/Unmanned (MUM) teaming with Brigade Combat Team ground SIGINT

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 0023A01001 / MQ-1 Payload (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Terminal Guidance (STG) teams and manned airborne assets. The TSP system improves situational awareness and shortens the targeting cycle by detecting and identifying emitters associated with high value targets (HVTs). The TSP system is capable of processing conventional signals, standard military signals, and modern signals of interest. This includes detection, recognition, identification, direction finding, and high confidence geo-location.

MQ-1C Gray Eagle Extended Range (GE-ER) - Program Manager Unmanned Aircraft Systems(PM UAS) received a Congressional plus up of \$49M President's Budget15 (PB15) to procure Extended Range UAS which increases the CPD objective endurance requirements for the current GE configuration. To meet the PM UAS GE-ER test schedule 1st QTR FY18 and first unit equipped date, TSP must be integrated and tested on the IGE and the A-Kit must be modified.

	Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	70.510	-	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	70.510	-	-	-	-	-	-	-	-

Justification:
 CSP: FY2020 No Base or OCO Procurement dollars.

 STARLite: FY 2020 No Base or OCO Procurement dollars.

 TSP: FY 2020 No Base or OCO Procurement dollars.

 All Quantities are for the Active component.

 Comments:
 In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for the homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 0028A02706 / Universal Ground Control Equipment (UAS)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	-	15.000	27.114	2.090	-	2.090	7.872	7.987	-	-	-	60.063
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	15.000	27.114	2.090	-	2.090	7.872	7.987	-	-	-	60.063
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	15.000	27.114	2.090	-	2.090	7.872	7.987	-	-	-	60.063

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Universal Ground Control Station (UGCS) software and hardware modernization efforts mitigate costly maintenance and testing burden by utilizing an open software architecture that supports the separation of flight and mission critical functionality. Builds software infrastructure that will support current and emerging Unmanned Aircraft Systems (UAS) Universal Ground Control Station (UGCS) as well as Scalable Control Interface (SCI) requirements.

Current Universal Products consist of the UGCS, the Universal Ground Data Terminal (UGDT) and the Universal Mission Simulator (UMS). The Universal Products will be capable of flight and payload control of multiple unmanned aircraft systems. UGCS is protected in a climate-controlled, standard S-280 or S-788 U.S. Army shelter and mounted on either a standard Army FMTV or HMMWV, the UGCS receives and disseminates battlefield video and situational awareness data through state-of-the-art operator consoles. Consoles can be used to provide aircraft command and control, payload control and weapons launch. Future GCS modifications will allowed scaled down sizes of GCS to support expeditionary operations.

The UGDT provides a Line of Sight (LOS) capability for transmit and receipt of UAS command and control and UAS payload products. The UGDT is the common datalink system for U. S. Army UAS.

The Universal Mission Simulator (UMS) consists of the hardware and software required to fully train UAS operators to full Readiness Level (RL) 1. The UMS will be capable of training and simulating flight and payload control of [Directorate of Simulation (DOS)] Shadow and Gray Eagle unmanned aircraft systems.

The OSRVT Increment II consists of a Remote Operations Video Enhanced Receiver (ROVER), Miltope tablet, Antennas, UHF Modem, Type I encryption, Ku-Directional Antennas (KuDA) with an On-The-Move (OTM) capable variant, and an extended range Mobile Directional Antennas System (MDAS). Software supports decoding Telemetry Data from multiple Manned/Unmanned Aircraft Systems, provides Electro-Optical (EO)/Infrared (IR) payload control, and supports off-target calculations. OSRVT supports current operations and emerging requirements.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	15.000	27.114	2.090	-	2.090	7.872	7.987	-
Total:	Quantity	-	-	-	-	-	-	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 0028A02706 / Universal Ground Control Equipment (UAS)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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	15.000	27.114	2.090	-	2.090	7.872	7.987	-	-

Justification:
 FY20 Base Procurement funds in the amount of \$2.090 Million will be utilized to procure UGCS Hardware components modernization for Unmanned Aerial Systems (UAS) fleet to include but not limited to Gray Eagle (MQ-1C), and Shadow (RQ-7) Programs of Record.

Title: Universal Products (UGCS and UGDT)
 The APA funding continues the procurement and implementation of hardware to address modernization while enforcing commonality across the U-Product fleet. Current planning allocates \$2.090 Million for procurement of common UGCS computing/communications hardware and associated integration/qualification, and associated systems engineering, program management, and logistics support.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305204A, 0305219A
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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>)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	728.343	1,138.430	-	-	-	-	-	-	-	-	1,099.838

Description:

The MQ-1C Gray Eagle provides the Army with an Extended Range, Multi-Purpose (ERMP) Unmanned Aircraft System (UAS); capable of executing reconnaissance, security, attack, and intelligence collection missions in the range of military operations (ROMO). Sensors/payloads include an Electro-Optical/Infrared/Laser Designator (EO/IR/LD), Synthetic Aperture Radar/Moving Target Indicator (SAR/MTI), Signals Intelligence (SIGINT), and HELLFIRE missiles; providing a near all-weather mission capability. MQ-1C Gray Eagle is a dedicated, assured, multi-mission Unmanned Aircraft System (UAS) fielded to all Army Divisions, Intelligence and Security Command and Army Special Operations Command in support of the commander's warfighting priorities and Aviation Force 1.1 capabilities enabling Multi-Domain Battle (MDB) operations.

The Warrior Alpha Modification funding is required to bring the Warrior Alpha fleet to the latest configuration to include modernization to High Definition EO/IR/LD payloads, Beyond Line of Sight (BLOS) classified payloads and the Vortex payload system. These modernizations includes integration, new hardware, and software changes. The FY19 OCO funding procures ten (10) payloads and associated integration cost. The Warrior Alpha UAS provides 24 hour a day operations. The systems are capable of executing reconnaissance, security and intelligence collection. The system is non weapons capable. All systems are Government Owned Contractor Operated (GOCO) systems currently located at Dugway Proving Ground. Sensors/payloads include are Electro-Optical/Infrared/Laser Designator (EO/IR/LD), BLOS classified payloads and Vortex payloads. Providing a near all-weather mission capability the system is a dedicated, assured, multi-mission Unmanned Aircraft System (UAS) providing GOCO operation to Army Special Operations Command in support of the commander's warfighting priorities.

The MQ-1C Gray Eagle Modification/Product Improvement Program (PIP) funding is required for the modernization of the datalink system to enable multi-band communication for both Line of Sight and Beyond Line of Sight data transmission. Datalink modernization is a multi-phase initiative that involves procuring new SATCOM ground and air vehicle equipment as well as software updates. PIP funding also supports multi-phase integration efforts and hardware/software procurement in support of Army Assured Precision Navigation and Timing (A-PNT) requirements to allow the MQ-1C Gray Eagle to survive, persist, and thrive in GPS denied environments. Additionally, PIP funding supports Avionics Modernization efforts that include software partitioning and re-architecture to allow for separation of critical and non-critical functions on the platform, and addressing current system processing limitations with upgraded processors. These features serve as critical enablers for both the datalinks and A-PNT modernization efforts, as well as supporting incorporation of future mission equipment.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft					P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2					
ID Code (A=Service Ready, B=Not Service Ready):			Program Elements for Code B Items: N/A			Other Related Program Elements: 0305204A, 0305219A				
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
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305204A, 0305219A
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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-3a	A00002 / MQ-1C Gray Eagle Modifications (UNCLASSIFIED)				- / -	- / 74.291	- / 129.781	- / 14.699	- / -	- / 14.699
P-40	Total Gross/Weapon System Cost				- / -	- / 74.291	- / 129.781	- / 14.699	- / -	- / 14.699

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A00002 / MQ-1C Gray Eagle Modifications (UNCLASSIFIED)				- / 14.089	- / 1.662	- / 1.548	- / 1.495	- / -	- / 237.565
P-40	Total Gross/Weapon System Cost				- / 14.089	- / 1.662	- / 1.548	- / 1.495	- / -	- / 237.565

*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 Fiscal Year (FY) 2020 Aircraft Modification/Product Improvement Program (PIP) base funding of \$14.699 million supports the procurement of the Global Positioning System (GPS) Denied equipment and transitioning SATCOM datalink to a multi-band frequency.

The base funding supports the second phase of a multi-phased approach for Assured Positioning Navigation and Timing (A-PNT) requirements to enable the MQ-1C Gray Eagle aircraft to navigate using current Electro-Optical (EO) / Infrared (IR) cameras and/or Pseudo-lite systems, allowing continued operations in a GPS-denied environment.

The modernization of the existing datalink enables transition from Ku-band frequency to a multi-band frequency enabling improved datalink security and increased bandwidth. Future hardware procurements will improve transportability and yield long-term cost savings by reducing Field Service Representative maintenance support. Datalink modernization is required in order for the MQ-1C Gray Eagle to operate in current and future battlefields. The modernization consists of procuring of new SATCOM ground and air vehicle equipment as well as software updates.

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2	Modification Number / Title: A00002 / MQ-1C Gray Eagle Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565

(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)	-	728.343	1,138.430	-	-	-	-	-	-	-	-	1,099.838

Description:

The MQ-1C Gray Eagle provides the Army with an Extended Range, Multi-Purpose (ERMP) Unmanned Aircraft System (UAS); capable of executing reconnaissance, security, attack, and intelligence collection missions in the range of military operations (ROMO). Sensors/payloads include an Electro-Optical/Infrared/Laser Designator (EO/IR/LD), Synthetic Aperture Radar/Moving Target Indicator (SAR/MTI), Signals Intelligence (SIGINT), and HELLFIRE missiles; providing a near all-weather mission capability. MQ-1C Gray Eagle is a dedicated, assured, multi-mission Unmanned Aircraft System (UAS) fielded to all Army Divisions, Intelligence and Security Command and Army Special Operations Command in support of the commander's warfighting priorities and Aviation Force 1.1 capabilities enabling Multi-Domain Battle (MDB) operations.

The Warrior Alpha Modification funding is required to bring the Warrior Alpha fleet to the latest configuration to include modernization to High Definition EO/IR/LD payloads, Beyond Line of Sight (BLOS) classified payloads and the Vortex payload system. These modernizations includes integration, new hardware, and software changes. The FY19 OCO funding procures ten (10) payloads and associated integration cost. The Warrior Alpha UAS provides 24 hour a day operations. The systems are capable of executing reconnaissance, security and intelligence collection. The system is non weapons capable. All systems are Government Owned Contractor Operated (GOCO) systems currently located at Dugway Proving Ground. Sensors/payloads include are Electro-Optical/Infrared/Laser Designator (EO/IR/LD), BLOS classified payloads and Vortex payloads. Providing a near all-weather mission capability the system is a dedicated, assured, multi-mission Unmanned Aircraft System (UAS) providing GOCO operation to Army Special Operations Command in support of the commander's warfighting priorities.

The MQ-1C Gray Eagle Modification/Product Improvement Program (PIP) funding is required for the modernization of the datalink system to enable multi-band communication for both Line of Sight and Beyond Line of Sight data transmission. Datalink modernization is a multi-phase initiative that involves procuring new SATCOM ground and air vehicle equipment as well as software updates. PIP funding also supports multi-phase integration efforts and hardware/software procurement in support of Army Assured Precision Navigation and Timing (A-PNT) requirements to allow the MQ-1C Gray Eagle to survive, persist, and thrive in GPS denied environments. Additionally, PIP funding supports Avionics Modernization efforts that include software partitioning and re-architecture to allow for separation of critical and non-critical functions on the platform, and addressing current system processing limitations with upgraded processors. These features serve as critical enablers for both the datalinks and A-PNT modernization efforts, as well as supporting incorporation of future mission equipment.

Note: Each A-kit and B-kit modifies one (1) aircraft.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2	Modification Number / Title: A00002 / MQ-1C Gray Eagle Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
	Total Obligation Authority	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495

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Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2						Modification Number / Title: A00002 / MQ-1C Gray Eagle Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A				Modification Type: UNCLASSIFIED				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 3: Warrior Alpha Modification													
A Kits													
Non-Recurring													
Non-recurring engineering	- / -	- / -	- / 5.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 5.000	
Subtotal: Non-Recurring	- / -	- / -	- / 5.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 5.000	
B Kits													
Recurring													
High Definition & BLOS Payload	- / -	- / -	10 / 27.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	10 / 27.000	
Subtotal: Recurring	- / -	- / -	10 / 27.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 27.000	
Subtotal: Warrior Alpha Modification	- / -	- / -	10 / 32.000	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	10 / 32.000	
Modification Item 2 of 3: Assured Positioning Navigation Timing Improvements													
B Kits													
Recurring													
Global Positioning System (GPS) Denied	- / -	113 / 16.611	112 / 16.464	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	225 / 33.075	
Subtotal: Recurring	- / -	113 / 16.611	112 / 16.464	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	225 / 33.075	
Non-Recurring													
Software Updates	- / -	- / 24.310	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 24.310	
Non-GPS Navigation NRE	- / -	- / 3.000	- / 6.000	- / 3.000	- / -	- / 3.000	- / -	- / -	- / -	- / -	- / 0.000	- / 12.000	
Program Management	- / -	- / 4.631	- / 4.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 9.431	
Navigator 2 Qualification	- / -	- / 17.730	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 17.730	
Auto-pilot Improvements	- / -	- / 4.330	- / 4.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.830	
Avionics NRE	- / -	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.000	
Subtotal: Non-Recurring	- / -	- / 44.001	- / 25.300	- / 3.000	- / -	- / 3.000	- / -	- / -	- / -	- / -	- / -	- / 72.301	
Subtotal: Assured Positioning Navigation Timing Improvements	- / -	113 / 60.612	112 / 41.764	- / 3.000	- / -	- / 3.000	- / -	- / -	- / -	- / -	- / -	225 / 105.376	
Modification Item 3 of 3: Datalink Modernization													
B Kits													
Recurring													
Datalink Modernization B-Kits	- / -	- / -	1 / 2.716	5 / 6.900	- / -	5 / 6.900	8 / 11.689	1 / 1.362	1 / 1.248	1 / 1.195	- / 0.000	17 / 25.110	

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2					Modification Number / Title: A00002 / MQ-1C Gray Eagle Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A			Modification Type: UNCLASSIFIED					Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<i>Subtotal: Recurring</i>	- / -	- / -	1 / 2.716	5 / 6.900	- / -	5 / 6.900	8 / 11.689	1 / 1.362	1 / 1.248	1 / 1.195	- / -	17 / 25.110	
Non-Recurring													
Software Update	- / -	- / -	- / 25.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 25.000	
Datalink Modernization NRE	- / -	- / 9.611	- / 23.969	- / 3.299	- / -	- / 3.299	- / -	- / -	- / -	- / -	- / 0.000	- / 36.879	
<i>Subtotal: Non-Recurring</i>	- / -	- / 9.611	- / 48.969	- / 3.299	- / -	- / 3.299	- / -	- / -	- / -	- / -	- / -	- / 61.879	
<i>Subtotal: Datalink Modernization</i>	- / -	- / 9.611	1 / 51.685	5 / 10.199	- / -	5 / 10.199	8 / 11.689	1 / 1.362	1 / 1.248	1 / 1.195	- / -	17 / 86.989	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	113 / 70.223	123 / 125.449	5 / 13.199	- / -	5 / 13.199	8 / 11.689	1 / 1.362	1 / 1.248	1 / 1.195	- / -	252 / 224.365	
Installation													
<i>Modification Item 2 of 3: Assured Positioning Navigation Timing Improvements</i>	- / -	113 / 4.068	112 / 4.032	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	225 / 8.100	
<i>Modification Item 3 of 3: Datalink Modernization</i>	- / -	- / -	1 / 0.300	5 / 1.500	- / -	5 / 1.500	8 / 2.400	1 / 0.300	1 / 0.300	1 / 0.300	- / -	17 / 5.100	
<i>Subtotal: Installation</i>	- / -	113 / 4.068	113 / 4.332	5 / 1.500	- / -	5 / 1.500	8 / 2.400	1 / 0.300	1 / 0.300	1 / 0.300	- / -	242 / 13.200	
Total													
Total Cost (Procurement + Support + Installation)	-	74.291	129.781	14.699	-	14.699	14.089	1.662	1.548	1.495	-	237.565	

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Exhibit P-3a, Individual Modification: PB 2020 Army						Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2			Modification Number / Title: A00002 / MQ-1C Gray Eagle Modifications	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 3: Warrior Alpha Modification							
Manufacturer Information							
Manufacturer Name: General Atomics				Manufacturer Location: Poway, CA			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 15			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Jan 2019					
Delivery Dates		Apr 2020					
Installation Information							
Method of Implementation (Organic): Replacement aircraft build					Installation Quantity: 10		

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 0756AA6601 / Gray Eagle Mods2	Modification Number / Title: A00002 / MQ-1C Gray Eagle Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 3: Assured Positioning Navigation Timing Improvements

Manufacturer Information

Manufacturer Name: General Atomics (GA-ASI)	Manufacturer Location: Poway, CA
Administrative Leadtime (in Months): 4	Production Leadtime (in Months): 24

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Sep 2018	Jan 2019					
Delivery Dates	Sep 2020	Jan 2021					

Installation Information

Method of Implementation: FSR Fielded Retrofits

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	- / -	113 / 4.068	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	113 / 4.068
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	- / -	- / -	112 / 4.032	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	112 / 4.032
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	113 / 4.068	112 / 4.032	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	225 / 8.100

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	50	63	-	-	50	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	50	63	-	-	50	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	1,136.248	106.775	117.274	35.189	80.260	115.449	116.153	75.834	90.469	45.309	-	1,803.511
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,136.248	106.775	117.274	35.189	80.260	115.449	116.153	75.834	90.469	45.309	-	1,803.511
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,136.248	106.775	117.274	35.189	80.260	115.449	116.153	75.834	90.469	45.309	-	1,803.511

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	284,062.000	26,693.750	39,091.333	17,594.500	-	57,724.500	116,153.000	15,166.800	15,078.167	9,061.800	-	60,117.033

Description:

AZ2001 Multi Sensor ABN Recon (MIP) is the Parent Line to Airborne Reconnaissance Low - Enhanced (MIP)(ARL-E) (AZ2050),EMARSS Payloads (MIP)(AZ2054) and Guardrail Payloads (MIP) (AZ2052),IAW the Aerial Layer 2020 Strategy.

Airborne Reconnaissance Low - Enhanced (ARL-E) is a worldwide self-deployable airborne Intelligence Surveillance Reconnaissance (ISR) system designed for timely, accurate, assured support to tactical forces over the full spectrum of operations. This system is a De Havilland DHC-8 aircraft replacing the DHC-7 IAW the Aerial ISR (AISR) 2020 Strategy. ARL-E will enhance the ARL-M sensor capability sets through the procurement of new and refurbished sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. It provides a persistent capability to include: Broad-Area Surveillance and/or Focused Stare on Target Areas of Interest (Point or Objective Targets), Electro-Optical/Infrared (EO/IR)/Full-Motion Video (FMV) , Multi-Mode Radar, Robust Communications Intelligence (COMINT), on-Board Collection, Analysis, Sensor Cross Cue and dissemination through Distributed Common Ground System-Army (DCGS-A) Enabled workstations. ARL-E will be assigned to the U.S. Army Intelligence and Security Command's Aerial ISR Brigade providing AISR support to combatant commanders. For the overall system, the Army Acquisition Objective and the Army Procurement Objective, is nine (9). The Mission Equipment Package (MEP) objective is eight (8).

This funding line supports the procurement and modernization of eight (8) complete MEP sets, which includes the following sensors: one (1) COMINT subsystem capable of supporting theater net centric geo-location efforts, two (2) High Definition FMV sensors and one (1) Improved Synthetic Aperture Radar / Ground Moving Target Indicator (SAR/GMTI) radar subsystem or one (1) SAR/Dismounted Moving Target Indicator (DMTI) subsystem. The MEP will also include four (4) DCGS-A workstations, one (1) set of communication equipment (mission radios, Beyond line of Site (BLOS) and Line of Site (LOS) Data links). ARL-E will be capable of rapid installation of sensors in a plug and play, quick connect/disconnect, mounting system to allow various combinations of sensor-types in support of a wide-range of theater operations. All MEPs will include the infrastructure to plug and play a Hyper-spectral imagery (HSI) Payload purchased under a QRC program. Future Growth capabilities include: Wide-Area Aerial Surveillance (WAAS), Light Detection and Ranging (LiDAR) and Foliage Penetration Radar (FOPEN).

The overall Airborne Reconnaissance Low-Enhanced (ARL-E) procurement/modernization efforts are found in the following three (3) lines; AZ2050 ARL Payloads (Project Manager Sensors - Aerial Intelligence), A02109, ARL-E SEMA (MIP) and A02110 ARL-E SEMA Mods (MIP) (Fixed Wing Project Office). Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne Intelligence systems to Program Executive Officer for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

The Guardrail Common Sensor (GRCS) is an airborne Signals Intelligence (SIGINT) Collection and Location System capable of providing Tactical Commanders Near-Real Time intelligence. It provides a persistent capability to detect, locate and classify/identify critical targets with a relevant degree of timeliness and accuracy. GRCS is assigned to two (2) U.S. Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance (AISR) support to combatant commanders. In accordance with the Army's AISR 2020 strategy, the Army's Acquisition Objective/Army's Procurement Objective (AAO/APO) is 19 RC-12X; seven (7) fielded to 3rd MI BN; seven (7) fielded to the 204th MI BN, and five (5) pilot trainers to support Force Generation. The five (5) trainers are not equipped with Primary Mission Equipment (PME).

The overall GRCS procurement/modernization efforts are found in the following two lines: AZ2052 Guardrail Payloads (MIP) and A02111 GRCS SEMA MODS (MIP). Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne Intelligence systems to Program Executive Office for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the U.S. Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the United States Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT). Congressional Plus-up for up to two (2) EMARSS-E aircraft.

Each EMARSS variant has a distinct Mission Equipment Package (MEP). This funding line supports the pre-planned product improvements of the following sensor capabilities: SIGINT; Electro-optical/Infrared (EO/IR)/Full Motion Video (FMV); Communications Intelligence (COMINT) to include Big Iron; Wide Area Aerial Surveillance (WAAS); Light Imaging Detection and Ranging (LiDAR) and improved Synthetic Aperture RADAR / Moving Target Indicator (SAR/MTI) RADAR; line-of-site (LOS) and beyond line-of-site (BLOS) communications; and Processing Exploitation and Dissemination (PED) supporting two Distributed Common Ground System - Army (DCGS-A) enabled operator workstations.

The overall EMARSS procurement/modernization efforts are found in the following two lines; AZ2054 EMARSS Payloads (Project Manager Sensors - Aerial Intelligence) and A02112 EMARSS SEMA Mods (Fixed Wing Project Office). Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne Intelligence systems to Program Executive Officer for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

EMARSS transitioned from A02005.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	106.775	117.274	35.189	80.260	115.449	116.153	75.834	90.469	45.309
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	106.775	117.274	35.189	80.260	115.449	116.153	75.834	90.469	45.309

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft

P-1 Line Item Number / Title:
1036AZ2001 / Multi Sensor ABN Recon (MIP)

ID Code (A=Service Ready, B=Not Service Ready): **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-3a	AZ2050 / ARL Mod-In-Service (Operational)				- / 1,050.289	- / 59.938	- / 80.119	- / 32.895	- / 45.000	- / 77.895
P-3a	AZ2052 / Guardrail MODS MIP (U)				- / 37.966	- / 34.370	- / 18.346	- / 0.148	- / 25.260	- / 25.408
P-3a	AZ2054 / EMARSS Payloads (x)				- / 47.993	- / 12.467	- / 18.809	- / 2.146	- / 10.000	- / 12.146
P-40	Total Gross/Weapon System Cost				- / 1,136.248	- / 106.775	- / 117.274	- / 35.189	- / 80.260	- / 115.449

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AZ2050 / ARL Mod-In-Service (Operational)				- / 78.588	- / 49.071	- / 45.103	- / 18.342	- / -	- / 1,459.345
P-3a	AZ2052 / Guardrail MODS MIP (U)				- / 25.389	- / 18.998	- / 37.447	- / 16.446	- / -	- / 214.370
P-3a	AZ2054 / EMARSS Payloads (x)				- / 12.176	- / 7.765	- / 7.919	- / 10.521	- / -	- / 129.796
P-40	Total Gross/Weapon System Cost				- / 116.153	- / 75.834	- / 90.469	- / 45.309	- / -	- / 1,803.511

*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 2020 base funding to support the overall ARL-E effort are found in the following two lines: AZ2050 ARL Payloads and A02110 ARL SEMA Mods (Project Manager Fixed Wing (PM FW) (separate form).
 The purpose of ARL-E AZ2050 is to procure, upgrade, test and integrate sensors; communications architecture for sensor information exploitation and dissemination; test, nonrecurring engineering, and integration in support of the ARL-E Payload program ensuring ARL-E is rapidly deployable world-wide against current, new, and emerging threats.
 ARL-E FY 2020 Base procurement dollars in the amount of \$32.895 million supports the procurement of one (1) Long Range Radar system and aircraft integration and test of one (1) system - aircraft 5.
 ARL-E FY 2020 OCO procurement dollars in the amount of \$45.000 million supports aircraft modifications for one (1) system - aircraft 5, system test and evaluation, Integrated Contractor Logistics Support, the procurement of one (1) set of Full Motion Video (FMV) MX-20 sensors, communications equipment, and sparing for ARL-E sensors and associated hardware.
 The schedule (in/out) reflects the start of MEP SIL testing and completion of aircraft integration efforts.
 FY 2020 funding to support the overall GRCS efforts are found in the following two lines; AZ2052 GRCS Payloads (Project Manager Sensors - Aerial Intelligence (PM SAI)) and A02111 GRCS SEMA (Project Manager Fixed Wing (PM FW)) (separate form).
 The purpose of GRCS AZ2052 is to procure, upgrade, and integrate SIGINT sensors, as well as the communications suite, and processing, exploitation and dissemination equipment on Guardrail. This will ensure Guardrail is rapidly-deployable, world-wide, against current, new, and emerging threats.
 GRCS FY 2020 Base APA procurement dollars in the amount of \$0.148 million supports procurements of spare parts for SIGINT Enhancement effort.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft		P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>GRCS FY 2020 OCO APA procurement dollars in the amount of \$25.260 million supports procurements for GRCS advanced signal enhancement efforts, integration and testing of the signal enhancement infrastructure for GRCS updated SIGINT sensor capabilities, to include: software porting, and hardware modernization efforts.</p> <p>FY 2020 base funding to support the overall EMARSS efforts are found in the following two lines: AZ2054 EMARSS Payloads (per this form) and A02112 EMARSS SEMA (separate form).</p> <p>The purpose of EMARSS AZ2054 is to support the procurement and upgrade of the following sensor payload capabilities: Signals Intelligence (SIGINT); Electro-optical/Infrared (EO/IR)/Full Motion Video (FMV); a Communications Intelligence (COMINT) to include Big Iron; Wide Area Aerial Surveillance (WAAS); Light Imaging Detection and Ranging (LiDAR) and improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar; line-of-site (LOS) and beyond line-of-site (BLOS) communications; Processing Exploitation and Dissemination (PED) supporting two Distributed Common Ground System - Army (DCGS-A) enabled operator workstations; and pre-planned product improvements.</p> <p>FY 2020 Base procurement dollars in the amount of \$2.146 million supports EMARSS SIGINT Enhancements and engineering support.</p> <p>FY 2020 OCO procurement dollars in the amount of \$10.000 million supports five (5) upgrades to the Signals Intelligence (SIGINT) sensor payload capabilities on EMARSS-V, M and S. These upgrades are required for continued operational readiness for Operation Freedom's Sentinel (OFS) and Operation Inherent Resolve (OIR) mission support. Due to the variation of sensors and capabilities per variant, unit cost per SIGINT system upgrade differs significantly between EMARSS-V, M and S.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>All funding is in Active Component.</p>		

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Exhibit P-3a, Individual Modification: PB 2020 Army	Date: March 2019
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Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2050 / ARL Mod-In-Service
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	1,050.289	59.938	80.119	32.895	45.000	77.895	78.588	49.071	45.103	18.342	-	1,459.345
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,050.289	59.938	80.119	32.895	45.000	77.895	78.588	49.071	45.103	18.342	-	1,459.345
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,050.289	59.938	80.119	32.895	45.000	77.895	78.588	49.071	45.103	18.342	-	1,459.345

(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>)	525,144.500	59,938.000	26,706.333	32,895.000	-	77,895.000	-	49,071.000	45,103.000	18,342.000	-	145,934.500

Description:

ARL-E FY 2020 Base procurement dollars in the amount of \$32.895 million supports the procurement of one (1) Long Range Radar system and aircraft integration and test of one (1) system - aircraft 5.

ARL-E FY 2020 OCO procurement dollars in the amount of \$45.000 million supports aircraft modifications for one (1) system - aircraft 5, system test and evaluation, Integrated Contractor Logistics Support, the procurement of one (1) set of Full Motion Video (FMV) MX-20 sensors, communications equipment, and sparing for ARL-E sensors and associated hardware.

The schedule (in/out) reflects the start of MEP SIL testing and the completion of aircraft integration/required test events.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	59.938	80.119	32.895	45.000	77.895	78.588	49.071	45.103	18.342
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	59.938	80.119	32.895	45.000	77.895	78.588	49.071	45.103	18.342

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Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)						Modification Number / Title: AZ2050 / ARL Mod-In-Service			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: ARL				Modification Type: Operational				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1: ARL Enhanced (ARL-E)</i>													
A Kits													
Recurring													
System Test & Eval support	- / 23.568	- / 2.267	- / 1.837	- / 0.000	- / 2.200	- / 2.200	- / 2.500	- / 4.347	- / 1.800	- / 1.500	- / 0.000	- / 40.019	
Program Mgt	- / 22.370	- / 5.994	- / 7.467	- / 0.000	- / 4.500	- / 4.500	- / 7.850	- / 4.500	- / 4.500	- / 2.000	- / 0.000	- / 59.181	
Spares	- / -	- / 1.152	- / -	- / 0.000	- / 8.150	- / 8.150	- / 12.603	- / 0.571	- / 11.793	- / -	- / 0.000	- / 34.269	
Training and Documentation	- / 6.054	- / 1.518	- / 2.038	- / 0.000	- / 2.200	- / 2.200	- / 7.605	- / -	- / -	- / 8.787	- / 0.000	- / 28.202	
Field Support	- / 1.167	- / 2.184	- / 14.925	- / 0.000	- / 16.000	- / 16.000	- / -	- / -	- / -	- / -	- / 0.000	- / 34.276	
Aircraft Standardization	- / 13.791	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.791	
Aircraft Modification	- / 2.485	- / 5.134	- / -	- / 0.000	- / 7.000	- / 7.000	- / 9.000	- / -	- / 9.160	- / -	- / 0.000	- / 32.779	
Subtotal: Recurring	- / 69.435	- / 18.249	- / 26.267	- / -	- / 40.050	- / 40.050	- / 39.558	- / 9.418	- / 27.253	- / 12.287	- / -	- / 242.517	
Non-Recurring													
Non Recurring Engineering	- / 22.302	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 22.302	
Subtotal: Non-Recurring	- / 22.302	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 22.302	
B Kits													
Recurring													
Upgrade MX-20D SWIR sensors	- / 4.100	- / 2.242	- / 2.400	- / 0.000	- / 1.300	- / 1.300	- / 1.874	- / 1.950	- / -	- / -	- / 0.000	- / 13.866	
SAR/DMTI sensor	- / 25.250	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 25.250	
Communications procurement	- / 11.910	- / 2.770	- / 2.800	- / 0.000	- / 2.900	- / 2.900	- / 2.751	- / 3.043	- / -	- / -	- / 0.000	- / 26.174	
LRR/Integration	- / 10.711	- / -	- / 15.952	- / 14.895	- / -	- / 14.895	- / -	- / -	- / -	- / -	- / 0.000	- / 41.558	
COMINT	- / 30.016	- / 2.767	- / -	- / -	- / -	- / -	- / 16.183	- / -	- / -	- / -	- / 0.000	- / 38.966	
HSI upgrade	- / 1.701	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.701	
DCGS-A Workstations	- / 38.462	- / 5.405	- / 5.500	- / -	- / -	- / -	- / 11.722	- / -	- / -	- / 6.055	- / 0.000	- / 67.144	
Upgrade MX-20HD Sensors	- / 2.500	- / 1.305	- / 1.400	- / 0.000	- / 0.750	- / 0.750	- / -	- / -	- / -	- / -	- / 0.000	- / 5.955	
MEP/PED System Integration Lab (SIL)	- / 27.389	- / 9.200	- / 10.800	- / -	- / -	- / -	- / 16.500	- / 17.160	- / -	- / -	- / 0.000	- / 81.049	
Subtotal: Recurring	- / 152.039	- / 23.689	- / 38.852	- / 14.895	- / 4.950	- / 19.845	- / 39.030	- / 22.153	- / -	- / 6.055	- / -	- / 301.663	
Subtotal: ARL Enhanced (ARL-E)	- / 243.776	- / 41.938	- / 65.119	- / 14.895	- / 45.000	- / 59.895	- / 78.588	- / 31.571	- / 27.253	- / 18.342	- / -	- / 566.482	
Subtotal: Procurement, All Modification Items	- / 243.776	- / 41.938	- / 65.119	- / 14.895	- / 45.000	- / 59.895	- / 78.588	- / 31.571	- / 27.253	- / 18.342	- / -	- / 566.482	
Installation													
<i>Modification Item 1 of 1: ARL Enhanced (ARL-E)</i>	3 / 806.513	1 / 18.000	- / 15.000	1 / 18.000	- / -	1 / 18.000	- / -	- / 17.500	1 / 17.850	- / -	2 / 0.000	8 / 892.863	
Subtotal: Installation	3 / 806.513	1 / 18.000	0 / 15.000	1 / 18.000	- / -	1 / 18.000	- / -	0 / 17.500	1 / 17.850	- / -	2 / 0.000	8 / 892.863	

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)						Modification Number / Title: AZ2050 / ARL Mod-In-Service		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: ARL				Modification Type: Operational				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Total												
Total Cost (Procurement + Support + Installation)	1,050.289	59.938	80.119	32.895	45.000	77.895	78.588	49.071	45.103	18.342	-	1,459.345

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2050 / ARL Mod-In-Service
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: ARL Enhanced (ARL-E)

Manufacturer Information

Manufacturer Name: Leidos	Manufacturer Location: Maryland
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 24

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates			Feb 2020	Nov 2021	Feb 2022		Jun 2024

Installation Information

Method of Implementation: Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	3 / 806.513	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 806.513
FY 2018	- / -	1 / 18.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 18.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	- / -	- / -	0 / 15.000	1 / 18.000	- / -	1 / 18.000	- / -	- / -	- / -	- / -	- / -	1 / 33.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 17.500	- / -	- / -	- / -	0 / 17.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 17.850	- / -	- / -	1 / 17.850
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	2 / 0.000
Total	3 / 806.513	1 / 18.000	0 / 15.000	1 / 18.000	- / -	1 / 18.000	- / -	0 / 17.500	1 / 17.850	- / -	2 / 0.000	8 / 892.863

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
In	3	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	1	8
Out	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	2	8	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	37.966	34.370	18.346	0.148	25.260	25.408	25.389	18.998	37.447	16.446	-	214.370
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	37.966	34.370	18.346	0.148	25.260	25.408	25.389	18.998	37.447	16.446	-	214.370
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	37.966	34.370	18.346	0.148	25.260	25.408	25.389	18.998	37.447	16.446	-	214.370

(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)	-	-	-	-	-	-	-	9,499.000	12,482.333	8,223.000	-	30,624.286

Description:

The Guardrail Common Sensor (GRCS) is an airborne Signals Intelligence (SIGINT) Collection and Location System capable of providing Tactical Commanders Near-Real Time intelligence. It provides a persistent capability to detect, locate and classify/identify critical targets with a relevant degree of timeliness and accuracy. GRCS is assigned to two (2) U.S. Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance (AISR) support to combatant commanders. In accordance with the Army's AISR 2020 strategy, the Army's Acquisition Objective/Army's Procurement Objective (AAO/APO) is 19 RC-12X; seven (7) fielded to 3rd MI BN; seven (7) fielded to the 204th MI BN, and five (5) pilot trainers to support Force Generation. The five (5) trainers are not equipped with Primary Mission Equipment (PME).

The overall GRCS procurement/modernization efforts are found in the following two lines: AZ2052 Guardrail Payloads (MIP) and A02111 GRCS SEMA MODS (MIP). Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne Intelligence systems to Program Executive Office for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

GRCS FY 2020 Base APA procurement dollars in the amount of \$0.148 million supports procurement of spare parts for the GRCS SIGINT enhancement effort.

GRCS FY 2020 OCO APA procurement dollars in the amount of \$25.260 million supports procurement for GRCS advanced signal enhancement efforts, integration and testing of the signal enhancement infrastructure for GRCS updated SIGINT sensor capabilities to include: software porting, and hardware modernization efforts.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	34.370	18.346	0.148	25.260	25.408	25.389	18.998	37.447	16.446
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	34.370	18.346	0.148	25.260	25.408	25.389	18.998	37.447	16.446

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)					Modification Number / Title: AZ2052 / Guardrail MODS MIP			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: See individual Mods				Modification Type: U				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 6: CHALS-SD Sensor Upgrades													
B Kits													
Recurring													
Pilots	- / -	- / 0.100	- / 0.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.500	
PMO/MWO	- / -	- / 0.294	- / 1.679	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.973	
Sensor Hardware & Materials	- / -	2 / 2.346	5 / 6.196	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	7 / 8.542	
Spares	- / -	- / -	3 / 3.420	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	3 / 3.420	
Subtotal: Recurring	- / -	2 / 2.740	8 / 11.695	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 14.435	
Non-Recurring													
Non-Recurring Engineering	- / -	- / 0.770	- / 2.862	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.632	
Subtotal: Non-Recurring	- / -	- / 0.770	- / 2.862	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.632	
Subtotal: CHALS-SD Sensor Upgrades	- / -	2 / 3.510	8 / 14.557	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	10 / 18.067	
Modification Item 2 of 6: ELINT Sensor Upgrades													
B Kits													
Recurring													
Pilots	- / -	- / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.100	
Program Mgt	- / -	- / 1.521	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.521	
Sensors - Material & Hardware	- / -	5 / 10.250	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	5 / 10.250	
Spares	- / -	2 / 3.910	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	2 / 3.910	
Subtotal: Recurring	- / -	7 / 15.781	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 15.781	
Non-Recurring													
Non-Recurring Engineering	- / -	- / 8.579	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.579	
Subtotal: Non-Recurring	- / -	- / 8.579	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8.579	
Subtotal: ELINT Sensor Upgrades	- / -	7 / 24.360	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	7 / 24.360	
Modification Item 3 of 6: SIGINT Suite Sensor Upgrades													
B Kits													
Recurring													
Pilots	- / -	- / -	- / -	- / 0.148	- / 0.052	- / 0.200	- / 0.200	- / 0.200	- / 0.200	- / 0.200	- / 0.000	- / 1.000	
Program Management	- / -	- / -	- / -	- / 0.000	- / 1.634	- / 1.634	- / 2.515	- / 1.530	- / 3.143	- / 1.512	- / 0.000	- / 10.334	
Sensors: Material & Hardware	- / -	- / -	- / -	0 / 0.000	4 / 17.355	4 / 17.355	2 / 9.856	2 / 9.204	3 / 8.263	- / -	- / 0.000	11 / 44.678	

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)					Modification Number / Title: AZ2052 / Guardrail MODS MIP		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: See individual Mods				Modification Type: U				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Spares Procurement	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 14.530	2 / 6.592	- / 0.000	5 / 21.122
Subtotal: Recurring	- / -	- / -	- / -	- / 0.148	4 / 19.041	4 / 19.189	2 / 12.571	2 / 10.934	6 / 26.136	2 / 8.304	- / -	16 / 77.134
Non-Recurring												
Non-Recurring Engineering	- / -	- / -	- / -	- / 0.000	- / 14.432	- / 14.432	- / 15.664	- / 1.474	- / 14.548	- / 2.729	- / 0.000	- / 18.847
Subtotal: Non-Recurring	- / -	- / -	- / -	- / -	- / 14.432	- / 14.432	- / 15.664	- / 1.474	- / 14.548	- / 2.729	- / -	- / 18.847
Subtotal: SIGINT Suite Sensor Upgrades	- / -	- / -	- / -	- / 0.148	4 / 23.473	4 / 23.621	2 / 18.235	2 / 12.408	6 / 30.684	2 / 11.033	- / -	16 / 95.981
Modification Item 4 of 6: USFK ONS												
Subtotal: USFK ONS	- / -	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.000
Modification Item 5 of 6: LS												
A Kits												
Recurring												
PMO, I&T, Spares	- / 5.825	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 15.825
Subtotal: Recurring	- / 5.825	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 15.825
Non-Recurring												
Software, Accreditation, OGS	- / 6.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 16.300
Subtotal: Non-Recurring	- / 6.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 16.300
Subtotal: LS	- / 12.125	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 12.125
Modification Item 6 of 6: Full Motion Video (FMV)												
A Kits												
Recurring												
Fielding, PMO, spares, FSR & Pilot spt	1 / 6.609	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	1 / 6.609
Subtotal: Recurring	1 / 6.609	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.609
B Kits												
Recurring												
Camera Reset	- / 3.073	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.073
Subtotal: Recurring	- / 3.073	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.073
Subtotal: Full Motion Video (FMV)	1 / 9.682	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	1 / 9.682
Subtotal: Procurement, All Modification Items	1 / 21.807	9 / 27.870	8 / 14.557	- / 0.148	4 / 23.473	4 / 23.621	2 / 18.235	2 / 12.408	6 / 30.684	2 / 11.033	- / -	34 / 160.215
Installation												
Modification Item 1 of 6: CHALS-SD Sensor Upgrades	- / -	2 / 1.231	5 / 3.789	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 5.020
Modification Item 2 of 6: ELINT Sensor Upgrades	- / -	5 / 3.867	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3.867

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Models of Systems Affected: See individual Mods **Modification Type:** U **Related RDT&E PEs:**

Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Modification Item 3 of 6: SIGINT Suite Sensor Upgrades	- / -	- / -	- / -	- / -	- / 1.787	- / 1.787	2 / 7.154	3 / 6.590	3 / 6.763	3 / 5.413	- / -	11 / 27.707
Modification Item 4 of 6: USFK ONS	- / -	- / 1.402	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.402
Modification Item 5 of 6: LS	- / 5.375	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 5.375
Modification Item 6 of 6: Full Motion Video (FMV)	- / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.784
<i>Subtotal: Installation</i>	<i>0 / 16.159</i>	<i>7 / 6.500</i>	<i>5 / 3.789</i>	<i>- / -</i>	<i>0 / 1.787</i>	<i>0 / 1.787</i>	<i>2 / 7.154</i>	<i>3 / 6.590</i>	<i>3 / 6.763</i>	<i>3 / 5.413</i>	<i>- / -</i>	<i>23 / 54.155</i>
Total												
Total Cost (Procurement + Support + Installation)	37.966	34.370	18.346	0.148	25.260	25.408	25.389	18.998	37.447	16.446	-	214.370

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 6: CHALS-SD Sensor Upgrades

Manufacturer Information

Manufacturer Name: ACET	Manufacturer Location: Sacramento, CA
Administrative Leadtime (in Months): 4	Production Leadtime (in Months): 18

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Oct 2018					
Delivery Dates				Mar 2021			

Installation Information

Method of Implementation: Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	2 / 1.231	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.231
FY 2019	- / -	- / -	5 / 3.789	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3.789
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	2 / 1.231	5 / 3.789	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 5.020

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot												
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4														
In	-	-	-	-	-	-	-	-	2	1	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	-	-	-	-	-	-	-	-	-	-	-	2	1	1	-	1	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 6: ELINT Sensor Upgrades

Manufacturer Information

Manufacturer Name: SNC EIS	Manufacturer Location: Los Gatos, CA
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Administrative Leadtime (in Months): 3	Production Leadtime (in Months): 12
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Aug 2018						
Delivery Dates			Aug 2020				

Installation Information

Method of Implementation: Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	5 / 3,867	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3,867
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	5 / 3,867	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3,867

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	-	-	-	-	2	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Out	-	-	-	-	-	-	-	-	-	-	2	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 6: SIGINT Suite Sensor Upgrades

Manufacturer Information

Manufacturer Name: Contractor	Manufacturer Location: TBD
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Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 12
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Dec 2019				
Delivery Dates							

Installation Information

Method of Implementation: TBD

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	- / -	- / -	- / -	0 / 0.000	0 / 1.787	0 / 1.787	- / -	- / -	- / -	- / -	- / -	0 / 1.787
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	2 / 7.154	- / -	- / -	- / -	- / -	2 / 7.154
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.590	- / -	- / -	- / -	3 / 6.590
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.763	- / -	- / -	3 / 6.763
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 5.413	- / -	3 / 5.413
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	- / -	- / -	- / -	0 / 1.787	0 / 1.787	2 / 7.154	3 / 6.590	3 / 6.763	3 / 5.413	- / -	11 / 27.707

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot								
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4										
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	1	-	1	1	-	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	11
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	-	1	1	-	1	1	-	1	1	1	-	1	1	2	11			

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 6: USFK ONS

Manufacturer Information

Manufacturer Name: ACET	Manufacturer Location: APG
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Administrative Leadtime (in Months):	Production Leadtime (in Months): 9
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Jul 2018						
Delivery Dates		Mar 2019					

Installation Information

Method of Implementation: PASS Contract W175PT-10-D-D420 KZ01

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	- / -	0 / 1.402	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.402
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	0 / 1.402	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.402

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 5 of 6: LS

Manufacturer Information

Manufacturer Name: ACET	Manufacturer Location: APG, MD
Administrative Leadtime (in Months):	Production Leadtime (in Months): 18

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

Installation Information

Method of Implementation: TBD

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 5.375	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 5.375
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 5.375	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 5.375

Installation Schedule

PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2052 / Guardrail MODS MIP
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 6 of 6: Full Motion Video (FMV)

Manufacturer Information

Manufacturer Name: ACET	Manufacturer Location: APG
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: PASS Contract

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 10.784
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 10.784

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2054 / EMARSS Payloads

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	47.993	12.467	18.809	2.146	10.000	12.146	12.176	7.765	7.919	10.521	-	129.796
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	47.993	12.467	18.809	2.146	10.000	12.146	12.176	7.765	7.919	10.521	-	129.796
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	47.993	12.467	18.809	2.146	10.000	12.146	12.176	7.765	7.919	10.521	-	129.796

(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)	23,996.500	4,155.667	-	2,146.000	-	12,146.000	12,176.000	3,882.500	3,959.500	5,260.500	-	9,984.308

Description:

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the U.S. Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the United States Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT). Congressional Plus-up for up to two (2) EMARSS-E aircraft.

This funding line supports the procurement and upgrade of the following sensor payload capabilities: Signals Intelligence (SIGINT); Electro-optical/Infrared (EO/IR)/Full Motion Video (FMV); a Communications Intelligence (COMINT) to include Big Iron; Wide Area Aerial Surveillance (WAAS); Light Imaging Detection and Ranging (LiDAR) and improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar; line-of-site (LOS) and beyond line-of-site (BLOS) communications; Processing Exploitation and Dissemination (PED) supporting two Distributed Common Ground System - Army (DCGS-A) enabled operator workstations; and pre-planned product improvements.

FY 2020 Base procurement dollars in the amount of \$2.146 million supports EMARSS SIGINT Enhancements and engineering support.

FY 2020 OCO procurement dollars in the amount of \$10.000 million supports five (5) upgrades to the Signals Intelligence (SIGINT) sensor payload capabilities on EMARSS-V, M and S. These upgrades are required for continued operational readiness for Operation Freedom's Sentinel (OFS) and Operation Inherent Resolve (OIR) mission support. Due to the variation of sensors and capabilities per variant, unit cost per SIGINT system upgrade and installation differs significantly between EMARSS-V, M and S.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	12.467	18.809	2.146	10.000	12.146	12.176	7.765	7.919	10.521
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	12.467	18.809	2.146	10.000	12.146	12.176	7.765	7.919	10.521

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)					Modification Number / Title: AZ2054 / EMARSS Payloads			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: EMARSS				Modification Type: x				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1: EMARSS Payloads</i>													
A Kits													
Recurring													
MEP Contractor Testing	- / 3.800	- / -	- / -	- / 0.000	- / 1.156	- / 1.156	- / 0.356	- / 1.456	- / 1.304	- / -	- / 0.000	- / 8.072	
GFE/Initial Spares	4 / 6.716	2 / 3.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	6 / 10.216	
PMO and SETA Support	- / 2.332	- / 1.229	- / -	- / 1.215	- / -	- / 1.215	- / 0.218	- / 0.777	- / 0.792	- / 1.052	- / 0.000	- / 7.615	
Engineering Support	- / 1.620	- / 2.550	- / 1.765	- / 0.931	- / 0.424	- / 1.355	- / 1.102	- / 2.132	- / 0.823	- / 1.295	- / 0.000	- / 12.642	
Mods in Service; SIGINT Upgrades	- / -	- / -	- / 9.344	0 / 0.000	5 / 4.920	5 / 4.920	5 / 7.500	1 / 1.500	2 / 3.000	1 / 1.500	- / 0.000	14 / 27.764	
TSA OPT Integration	- / -	- / -	- / 6.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.000	
A-Kit Procurements	- / -	- / -	- / -	- / 0.000	- / 1.000	- / 1.000	- / 0.100	- / 0.100	- / 0.200	- / -	- / 0.000	- / 1.400	
Mods in Service, LIDAR Upgrades	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 5.774	- / 0.000	- / 5.774	
Simulated Training Interface	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.500	- / -	- / -	- / -	- / 0.000	- / 1.500	
<i>Subtotal: Recurring</i>	<i>4 / 14.468</i>	<i>2 / 7.279</i>	<i>- / 17.109</i>	<i>- / 2.146</i>	<i>5 / 7.500</i>	<i>5 / 9.646</i>	<i>5 / 10.776</i>	<i>1 / 5.965</i>	<i>2 / 6.119</i>	<i>1 / 9.621</i>	<i>- / -</i>	<i>20 / 80.983</i>	
B Kits													
Non-Recurring													
MARSS 13 Upgrade	1 / 8.600	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	1 / 8.600	
RESET WAAS for EMARSS-G	- / 8.625	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.625	
SIGINT	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000	- / -	- / -	- / -	- / 0.000	- / 1.000	
<i>Subtotal: Non-Recurring</i>	<i>1 / 17.225</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 1.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 18.225</i>	
<i>Subtotal: EMARSS Payloads</i>	<i>5 / 31.693</i>	<i>2 / 7.279</i>	<i>- / 17.109</i>	<i>- / 2.146</i>	<i>5 / 7.500</i>	<i>5 / 9.646</i>	<i>5 / 11.776</i>	<i>1 / 5.965</i>	<i>2 / 6.119</i>	<i>1 / 9.621</i>	<i>- / -</i>	<i>21 / 99.208</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>5 / 31.693</i>	<i>2 / 7.279</i>	<i>- / 17.109</i>	<i>- / 2.146</i>	<i>5 / 7.500</i>	<i>5 / 9.646</i>	<i>5 / 11.776</i>	<i>1 / 5.965</i>	<i>2 / 6.119</i>	<i>1 / 9.621</i>	<i>- / -</i>	<i>21 / 99.208</i>	
Installation													
<i>Modification Item 1 of 1: EMARSS Payloads</i>	<i>4 / 16.300</i>	<i>1 / 5.188</i>	<i>1 / 1.700</i>	<i>- / -</i>	<i>5 / 2.500</i>	<i>5 / 2.500</i>	<i>4 / 0.400</i>	<i>2 / 1.800</i>	<i>2 / 1.800</i>	<i>1 / 0.900</i>	<i>- / -</i>	<i>20 / 30.588</i>	
<i>Subtotal: Installation</i>	<i>4 / 16.300</i>	<i>1 / 5.188</i>	<i>1 / 1.700</i>	<i>- / -</i>	<i>5 / 2.500</i>	<i>5 / 2.500</i>	<i>4 / 0.400</i>	<i>2 / 1.800</i>	<i>2 / 1.800</i>	<i>1 / 0.900</i>	<i>- / -</i>	<i>20 / 30.588</i>	
Total													
Total Cost (Procurement + Support + Installation)	47.993	12.467	18.809	2.146	10.000	12.146	12.176	7.765	7.919	10.521	-	129.796	

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 1036AZ2001 / Multi Sensor ABN Recon (MIP)	Modification Number / Title: AZ2054 / EMARSS Payloads

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: EMARSS Payloads

Manufacturer Information

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime (in Months): 8	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: EMARSS Modifications

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	1 / 5.188	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.188
FY 2019	2 / 9.500	- / -	1 / 1.700	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 11.200
FY 2020	2 / 6.800	- / -	- / -	0 / 0.000	2 / 1.000	2 / 1.000	- / -	- / -	- / -	- / -	- / -	4 / 7.800
FY 2021	- / -	- / -	- / -	0 / 0.000	3 / 1.500	3 / 1.500	4 / 0.400	- / -	- / -	- / -	- / -	7 / 1.900
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.800	- / -	- / -	- / -	2 / 1.800
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.800	- / -	- / -	2 / 1.800
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.900	- / -	1 / 0.900
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	4 / 16.300	1 / 5.188	1 / 1.700	- / -	5 / 2.500	5 / 2.500	4 / 0.400	2 / 1.800	2 / 1.800	1 / 0.900	- / -	20 / 30.588

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	1	-	-	-	-	-	1	-	-	-	2	-	1	-	2	-	-	1	2	-	-	1	1	-	-	1	-	-	-
Out	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	1	-	1	-	2	-	1	-	2	-	-	-	2	-	1	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	8,653.142	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	180.439	-	-	-	-	-	-	-	-	-	-	180.439
Net Procurement (P-1) (<i>\$ in Millions</i>)	8,472.703	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	180.439	-	-	-	-	-	-	-	-	-	-	180.439
Total Obligation Authority (<i>\$ in Millions</i>)	8,653.142	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AH-64 MODS (AA6606) program provides for modernization of the fielded AH-64D/AH-64E Apache fleet. AH-64D/AH-64E is a tandem cockpit, twin engine, single main rotor attack helicopter. The Apache aircraft incorporates the Longbow weapon system and provides the U.S. Army with significant target acquisition and firepower effectiveness, survivability, lethality, and fighting capabilities even during adverse weather conditions. The Apache is equipped with the Fire Control Radar/Radar Frequency Interferometer (FCR/RFI) mission kit and Fire and Forget Longbow HELLFIRE missiles. The Modernized Target Acquisition Designator Sight (MTADS) assembly is an Electro-Optical system that consists of a Day television (DTV), sensor, a Forward Looking Infrared (FLIR) sensor for day and night visibility as well as limited adverse weather operations, a Laser Spot Tracker (LST), and Laser Rangefinder/Designator (LRFD). The Modernized Pilot Night Vision Sensor (M-PNVS) is a FLIR system which allows Nap-of-Earth flight operations at night by the pilot independent of the co-pilot/gunner's FLIR. The Apache is armed with the HELLFIRE Antitank Missile, 2.75 inch rockets and a 30mm gun capable of defeating armor.

The AH-64 Mods Program allows for near-term operationally driven improvements to the Apache fleet, focusing on deployment lessons learned, and reliability improvements. Improvements will occur to the Airframe, Armament, Communications, Manned / Unmanned Teaming, Navigation, Sensors, Survivability, Support Elements, and Training Systems. Examples of modifications include Selected Component Recapitalization, Airframe and Sensor Capability upgrades, procurement of Modernized Day Sensor Assembly components, initial procurement of Modernized Radio-Frequency Interferometer (M-RFI), Software upgrades, Condition Based Maintenance (CBM), trainer concurrency, Computer/Processing and Data Display and Control upgrades. The AH-64D/AH-64E inventory crossover point (approx.400 AH-64D / 400 AH-64E) will occur in 2021. These modernization efforts are required to ensure the Longbow Apache remains a ready and relevant Soldier asset.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army	Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS

ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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-3a	AA6606 / AH-64 Modifications (Operational & Reliability Improvements and Resolve Obsolescence Issues)				- / 8,653.142	- / 238.141	- / 104.996	- / 58.172	- / -	- / 58.172
P-40	Total Gross/Weapon System Cost				- / 8,653.142	- / 238.141	- / 104.996	- / 58.172	- / -	- / 58.172

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA6606 / AH-64 Modifications (Operational & Reliability Improvements and Resolve Obsolescence Issues)				- / 85.475	- / 84.505	- / 82.166	- / 64.682	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 85.475	- / 84.505	- / 82.166	- / 64.682	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.
 Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY20 Base procurement dollars in the amount of \$58.172 million supports modification and service life extension efforts for the Airframe, Armament, Mission Command, Sensors, Survivability, Support Elements, Training Systems, and Manned/Unmanned Teaming.

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	8,653.142	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	180.439	-	-	-	-	-	-	-	-	-	-	180.439
Net Procurement (P-1) (<i>\$ in Millions</i>)	8,472.703	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	180.439	-	-	-	-	-	-	-	-	-	-	180.439
Total Obligation Authority (<i>\$ in Millions</i>)	8,653.142	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Airframe includes modifications to the Structural Subsystems, Propulsion/Drive/Rotor Systems, Health Monitoring System, and Recap Support/Kits. Structural Subsystems modifications include improvements to the assembled structural and aerodynamic components of the air vehicle to include the fuselage and associated manual flight control systems, rotor equipment, landing gear and associated equipment, environmental controls, racks, mounts, intersystem cables and distribution boxes. Propulsion/Drive/Rotor Systems together with Engine Electronic Digital Engine Control Unit (EDECUC) and Common Hydro-Mechanical Unit (CHMU) provides the capability to carry a heavier combat payload and allow for enhanced performance in high-altitude, hot climates. Landing Gear improvements (High Performance Shock Struts (HPSS)) will improve the aircraft crash survivability and allows for a heavier aircraft with greater combat loads. Provides sustainment, support and maintenance for the Apache test aircraft.

Mission Command includes modifications and/or upgrades to the various Apache processors and displays. Mission Computer / Processing modifications and/or upgrades include improvements to the master data processing unit(s) responsible for coordinating and directing the major avionics mission systems. System Simulation and Software Integration (S3I) Crew Station Working Group (CSWG) provides support for an AH-64E Engineering Analysis Cockpit as part of the Advance Prototyping and Engineering Experimentation (APBEX2) Lab to support continuous Operational Flight Program (OFP) software sustainment and product improvement. Battlefield Operations and Support System (BOSS) supports developmental / formal test to ensure interoperability and assists in certification testing of the Apache data link implementation. Data Link Test Tools (DLTT) supports developmental / formal test to ensure interoperability and assists in certification testing of the Apache data link implementation.

Sensors include modifications, operational improvements, and/or mitigation of capability issues to the Apache Sensor suite, which includes the MTADS/PNVS, the Modernized Day Sensor Assembly (MDSA). MDSA is the Modernized Laser Rangefinder/Designator (M-LFRD) which provides enhanced laser ranging, improved target designation, and target tracking capability by holding a stabilized laser beam on a distant stationary or moving point target for highly precise handoff to precision guided weapons. M-LFRD replaces the obsolete Laser Transceiver Unit, which mitigates ongoing risk, improves reliability and maintainability, and reduces operations and support costs. MDSA replaces the remaining legacy DSA components, adding a laser pointer, eye safe laser, and high definition color-camera capability. MDSA funding enables software integration, tooling, and test equipment procurement and system production.

Support Elements include the modification and production of those items, which are not part of the aircraft system but are required to maintain, service, or calibrate the aircraft systems or portions of the aircraft system while not directly engaged in the performance of its mission and will not be in the inventory for support of other weapon systems. Post Production Organic support establishes Depot Pilot Programs at Corpus Christi Army Depot (CCAD) and Tobyhanna Army Depot (TYAD) for selected Depot Level Repairables (DLR) as part of the Original Equipment Manufacturer (OEM) to Depot Transition. Post Production Organic Support (PPOS) provides Depot Maintenance Plant Equipment, Special Tools and Test Equipment, labor training and associated technical data for future repairs once the DLR has transitioned to the depot. PPOS improves Repair Turn Around Time and retain depot maintenance capabilities.

Training Systems include deliverable training services, Operator and Maintainer training devices, accessories, training aids, equipment, and parts used to facilitate instruction through which personnel will learn to operate and maintain the system with maximum efficiency. Examples include Operator / Maintainer Training (aircraft/classroom) devices, Cyber/RMF activities and new systems integration/concurrency to the

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

suite of training devices/systems, and updates to allow individual/team training tasks and collective training. Efforts include the production and upgrade of deliverable and fielded training systems, devices and equipment; updates to associated device/product hardware and software in the form of 3D Virtual Immersive Training, 3D models and desktop crew station emulation capability.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS					Modification Number / Title: AA6606 / AH-64 Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Longbow Apache				Modification Type: Operational & Reliability Improvements and Resolve Obsolescence Issues				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 6: Airframe													
A Kits													
Recurring													
Structural Subsystems	- / 12.535	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Health Monitoring System	- / 20.832	- / 7.332	- / 7.462	- / 8.880	- / -	- / 8.880	- / 8.908	- / 9.436	- / 9.606	- / 9.779	- / -	Continuing	Continuing
RESET / MEP Kits	- / 93.430	- / 28.173	- / 15.866	- / 21.323	- / -	- / 21.323	- / 6.054	- / 13.306	- / 14.086	- / 11.289	- / -	Continuing	Continuing
Other Support	- / 3.540	- / 1.816	- / 1.125	- / 1.994	- / -	- / 1.994	- / 1.015	- / 1.521	- / 2.005	- / 1.357	- / -	Continuing	Continuing
Subtotal: Recurring	- / 130.337	- / 37.321	- / 24.453	- / 32.197	- / -	- / 32.197	- / 15.977	- / 24.263	- / 25.697	- / 22.425	- / -	Continuing	Continuing
Subtotal: Airframe	- / 130.337	- / 37.321	- / 24.453	- / 32.197	- / -	- / 32.197	- / 15.977	- / 24.263	- / 25.697	- / 22.425	- / -	Continuing	Continuing
Modification Item 2 of 6: Mission Command													
A Kits													
Recurring													
Processors	- / 46.816	- / 5.907	- / 1.296	- / 5.848	- / -	- / 5.848	- / 5.960	- / 1.577	- / 1.607	- / 1.637	- / 0.000	- / 70.648	
Displays	- / 17.186	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 17.186	
Other Support	- / 3.734	- / 0.302	- / 0.062	- / 0.386	- / -	- / 0.386	- / 0.404	- / 0.105	- / 0.136	- / 0.105	- / 0.000	- / 15.234	
Subtotal: Recurring	- / 57.736	- / 6.209	- / 1.358	- / 6.234	- / -	- / 6.234	- / 6.364	- / 1.682	- / 1.743	- / 1.742	- / -	- / 83.068	
Subtotal: Mission Command	- / 57.736	- / 6.209	- / 1.358	- / 6.234	- / -	- / 6.234	- / 6.364	- / 1.682	- / 1.743	- / 1.742	- / -	- / 83.068	
Modification Item 3 of 6: Sensors													
A Kits													
Recurring													
MTADS/PNVS	- / 37.896	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 37.896	
M-RFI	27 / 43.338	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	27 / 43.338	
Other Support	- / 14.006	- / 6.635	- / 3.055	- / 0.154	- / -	- / 0.154	- / 3.708	- / 3.402	- / 3.929	- / 2.236	- / 0.000	- / 37.125	
Subtotal: Recurring	27 / 95.240	- / 6.635	- / 3.055	- / 0.154	- / -	- / 0.154	- / 3.708	- / 3.402	- / 3.929	- / 2.236	- / -	27 / 118.359	
B Kits													
Recurring													
M-LRFD	150 / 49.834	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	150 / 49.834	
M-DSA	99 / 182.460	105 / 129.713	38 / 63.360	- / 12.326	- / -	- / 12.326	26 / 54.660	25 / 50.868	18 / 46.422	8 / 34.717	- / 0.000	319 / 564.526	
Subtotal: Recurring	249 / 232.294	105 / 129.713	38 / 63.360	- / 12.326	- / -	- / 12.326	26 / 54.660	25 / 50.868	18 / 46.422	8 / 34.717	- / -	469 / 614.360	
Subtotal: Sensors	276 / 327.534	105 / 136.348	38 / 66.415	- / 12.480	- / -	- / 12.480	26 / 58.368	25 / 54.270	18 / 50.351	8 / 36.953	- / -	496 / 732.719	

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS						Modification Number / Title: AA6606 / AH-64 Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Longbow Apache				Modification Type: Operational & Reliability Improvements and Resolve Obsolescence Issues				Related RDT&E PEs:					
Financial Plan	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	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Modification Item 4 of 6: Training Systems													
A Kits													
Recurring													
Operator Devices	- / 125.165	- / 51.502	- / 19.253	- / 19.446	- / -	- / 19.446	- / 0.908	- / 0.680	- / 0.690	- / -	- / 0.000	- / 97.644	
Maintainer Devices	- / 113.718	- / 3.926	- / 2.929	- / 6.746	- / -	- / 6.746	- / 3.555	- / 3.341	- / 3.344	- / 3.347	- / 0.000	- / 40.906	
Other Support	- / 6.303	- / 2.835	- / 0.588	- / 1.069	- / -	- / 1.069	- / 0.303	- / 0.269	- / 0.341	- / 0.215	- / 0.000	- / 11.923	
Subtotal: Recurring	- / 145.186	- / 58.263	- / 12.770	- / 17.261	- / -	- / 17.261	- / 4.766	- / 4.290	- / 4.375	- / 3.562	- / -	- / 150.473	
Subtotal: Training Systems	- / 145.186	- / 58.263	- / 12.770	- / 17.261	- / -	- / 17.261	- / 4.766	- / 4.290	- / 4.375	- / 3.562	- / -	- / 150.473	
Modification Item 5 of 6: Hellfire Missile Launchers													
A Kits													
Recurring													
Hellfire Missile Launchers	- / 50.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 50.000	
Subtotal: Recurring	- / 50.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 50.000	
Subtotal: Hellfire Missile Launchers	- / 50.000	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 50.000	
Modification Item 6 of 6: AH-64 Mods Prior Year Cost													
A Kits													
Recurring													
AH-64 Mods Prior Year Cost	- / 8,042.349	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8,042.349	
Subtotal: Recurring	- / 8,042.349	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8,042.349	
Subtotal: AH-64 Mods Prior Year Cost	- / 8,042.349	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 8,042.349	
Subtotal: Procurement, All Modification Items	276 / 8,653.142	105 / 238.141	38 / 104.996	- / 58.172	- / -	- / 58.172	26 / 85.475	25 / 84.505	18 / 82.166	8 / 64.682	Continuing	Continuing	
Installation													
Modification Item 1 of 6: Airframe	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Modification Item 2 of 6: Mission Command	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Modification Item 3 of 6: Sensors	207 / 0.000	120 / 0.000	58 / 0.000	- / -	- / -	- / -	30 / 0.000	17 / 0.000	15 / 0.000	7 / 0.000	- / -	454 / 0.000	
Modification Item 4 of 6: Training Systems	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Modification Item 5 of 6: Hellfire Missile Launchers	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Modification Item 6 of 6: AH-64 Mods Prior Year Cost	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Subtotal: Installation	212 / 0.000	120 / 0.000	58 / 0.000	- / -	- / -	- / -	30 / 0.000	17 / 0.000	15 / 0.000	7 / 0.000	- / -	459 / 0.000	
Total													

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Models of Systems Affected: Longbow Apache	Modification Type: Operational & Reliability Improvements and Resolve Obsolescence Issues	Related RDT&E PEs:
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Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Total Cost (Procurement + Support + Installation)	8,653.142	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	Continuing	Continuing

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 6: Airframe

Manufacturer Information

Manufacturer Name: Various Manufacturer Location: Various

Administrative Leadtime (in Months): Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Modifications

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 2 of 6: Mission Command

Manufacturer Information

Manufacturer Name: Various Manufacturer Location: Various

Administrative Leadtime (in Months): Production Leadtime (in Months):

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

Installation Information

Method of Implementation: .

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

PYS	In	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 6: Sensors

Manufacturer Information

Manufacturer Name: Various	Manufacturer Location: Various
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 24

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Nov 2017	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023
Delivery Dates	Apr 2020	Oct 2020	Oct 2021	Oct 2022	Oct 2023	Oct 2024	Oct 2025

Installation Information

Method of Implementation: Modifications

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	150 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	150 / 0.000
FY 2018	8 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.000
FY 2019	49 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	49 / 0.000
FY 2020	0 / 0.000	120 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	120 / 0.000
FY 2021	0 / 0.000	- / -	58 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	58 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	30 / 0.000	- / -	- / -	- / -	- / -	30 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	17 / 0.000	- / -	- / -	- / -	17 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 0.000	7 / 0.000	- / -	22 / 0.000
Total	207 / 0.000	120 / 0.000	58 / 0.000	- / -	- / -	- / -	30 / 0.000	17 / 0.000	15 / 0.000	7 / 0.000	- / -	454 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	99	21	19	41	39	26	-	13	19	-	-	-	-	7	10	8	5	4	4	5	4	4	3	3	5	3	1	2	1	-	346
Out	-	-	-	4	5	4	15	27	16	21	19	41	39	26	-	13	19	-	-	-	-	7	10	8	5	4	4	5	4	50	346

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 6: Training Systems

Manufacturer Information

Manufacturer Name: Boeing / LSI Inc	Manufacturer Location: St. Louis, MO / Jacksonville, FL
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Field Retrofits

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

PYS	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 5 of 6: Hellfire Missile Launchers

Manufacturer Information

Manufacturer Name: Lockheed Martin Missiles and Fire Control Manufacturer Location: Orlando, Florida

Administrative Leadtime (in Months): Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Armament

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 2706AA6605 / AH-64 MODS	Modification Number / Title: AA6606 / AH-64 Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 6 of 6: AH-64 Mods Prior Year Cost

Manufacturer Information

Manufacturer Name: Various	Manufacturer Location: Various
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Modifications

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0607137A
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Line Item MDAP/MAIS Code: 278

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>)	11,020.063	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	1,168.857	-	-	-	-	-	-	-	-	-	-	1,168.857
Net Procurement (P-1) (<i>\$ in Millions</i>)	9,851.206	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	1,168.857	-	-	-	-	-	-	-	-	-	-	1,168.857
Total Obligation Authority (<i>\$ in Millions</i>)	11,020.063	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The CH-47F Chinook the Army's only heavy lift helicopter and is an essential component of the Army's Multi-Domain Battle framework.

The major modifications to the CH-47F include: the development, test, and fielding of updates for the Common Avionics Architecture System (CAAS) and the Digital Automatic Flight Control System (DAFCS) that provide improvements in cyber security, COMSEC, and aircraft handling qualities; the fielding of the Cargo Platform Health Environment (CPHE) and the Improved Vibration Control System to COMPOS 2 & 3; the fielding of CAAS version 9.4 and DAFCS 3.3 to all COMPOS; Training Aids Devices Simulators and Simulations (TADDS) equipment refresh; and the enduring requirement for software enhancement, avionics hardware refresh and safety improvements.

Avionics updates and safety improvements to maintain the H-47F Avionics and Software systems include: the Common Avionics Architecture System (CAAS), the Digital Automatic Flight Control System (DAFCS), and the Cargo Platform Health Environment (CPHE) systems. Requirements driven by changes in military interoperability, cyber security threats, and commercial airspace navigation require software systems updates, testing, integration, training and logistics support. The funding priorities are the development, testing, and fielding of improvements in cyber security, aircraft handling qualities, Degraded Visual Environment (DVE) performance, COMSEC improvements, A-PNT integration, multi-core processors, and expansion of the flexibility provided by the CAAS Modular Open Systems Architecture.

CAAS provides the primary interface to the pilots for all aircraft systems. It monitors aircraft health, provides sophisticated navigation and communication capabilities, and provides tactical situational awareness and interoperability. The DAFCS provides aircraft stability and handling qualities necessary for safe aircraft handling in a variety of environmental and weather conditions. The CPHE system provides the mechanism to complete necessary rotor track and balance activities, evaluate drivetrain vibration levels for maintenance purposes, and record and evaluate the data necessary to have a Condition Based Maintenance and a Health and Usage Monitoring program. These three systems run on specialized computers that primarily consist of commercial electronic components. The rapid pace of change in the commercial electronics hardware market, the evolving cyber security threats, and the requirement to remain interoperable, create a need for recurring updates to the design of avionics hardware and software.

The CAAS V9.4 fielding provides enhancements to the CH-47F including updates for compatibility with the latest Blue Force Tracker (BFT) system, Aircraft Survivability Equipment (ASE), Automatic Dependent Surveillance Broadcast (ADS-B) Out and significant pilot-vehicle interface improvements aimed at improvements in Degraded Visual Environment (DVE) performance. The BFT update provides mandated Type 1 encryption and improvements in data timeliness. ASE driven software updates include the addition of the AVR-2B laser detection system and improved threat situational awareness to pilots. ADS-B Out capability is mandated by the FAA to operate in US airspace. Finally, the Training Aids, Devices, Simulators, and Simulations (TADSS) system computers and projectors require a technical refresh. If any of these systems fail, all TADSS devices (TFPS, CHMT, CAT, VIE) will not function, negatively impacting aircrew and maintainer training and availability at the unit level.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Army							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft					P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)					
ID Code (A=Service Ready, B=Not Service Ready):			Program Elements for Code B Items: N/A			Other Related Program Elements: 0607137A				
Line Item MDAP/MAIS Code: 278										

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	22.366	26.063	7.582	-	7.582	1.518	0.869	0.606	0.734
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	1.744	4.203	-	4.203	2.034	2.067	-	-
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0607137A
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Line Item MDAP/MAIS Code: 278

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-3a	AA0252 / CH-47 Cargo Helicopter Mods (Unclassified)				- / 11,020.063	- / 22.366	- / 27.807	- / 11.785	- / -	- / 11.785
P-40	Total Gross/Weapon System Cost				- / 11,020.063	- / 22.366	- / 27.807	- / 11.785	- / -	- / 11.785

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA0252 / CH-47 Cargo Helicopter Mods (Unclassified)				- / 3.552	- / 2.936	- / 0.606	- / 0.734	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 3.552	- / 2.936	- / 0.606	- / 0.734	Continuing	Continuing

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

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

Justification:
 FY2020 Base procurement dollars in the amount of \$11.785 million supports avionics updates and safety improvements. Funding addresses the interoperability of Key Performance Parameters (KPPs): supports software updates for the digital cockpits across the fleet, corrects software related safety issues, maintains software lab infrastructure.

In accordance with Section 1815 of the 2008 National Defense Authorization Act (P.L 110-181), this item is necessary for use by the Active and Reserve Components of Armed Forces for homeland and defense missions, domestic emergency responses and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)	Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	11,020.063	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	1,168.857	-	-	-	-	-	-	-	-	-	-	1,168.857
Net Procurement (P-1) (\$ in Millions)	9,851.206	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	1,168.857	-	-	-	-	-	-	-	-	-	-	1,168.857
Total Obligation Authority (\$ in Millions)	11,020.063	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	Continuing	Continuing

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Avionics updates and safety improvements to maintain the H-47F Avionics and Software systems include: the Common Avionics Architecture System (CAAS), the Digital Automatic Flight Control System (DAFCS), and the Cargo Platform Health Environment (CPHE) systems. Requirements driven by changes in military interoperability, cyber security threats, and commercial airspace navigation require software systems updates, testing, integration, training and logistics support. The funding priorities are the development, testing, and fielding of improvements in cyber security, aircraft handling qualities, Degraded Visual Environment (DVE) performance, COMSEC improvements, A-PNT integration, multi-core processors, and expansion of the flexibility provided by the CAAS Modular Open Systems Architecture.

CAAS provides the primary interface to the pilots for all aircraft systems. It monitors aircraft health, provides sophisticated navigation and communication capabilities, and provides tactical situational awareness and interoperability. The DAFCS provides aircraft stability and handling qualities necessary for safe aircraft handling in a variety of environmental and weather conditions. The CPHE system provides the mechanism to complete necessary rotor track and balance activities, evaluate drivetrain vibration levels for maintenance purposes, and record and evaluate the data necessary to have a Condition Based Maintenance and a Health and Usage Monitoring program. These three systems run on specialized computers that primarily consist of commercial electronic components. The rapid pace of change in the commercial electronics hardware market, the evolving cyber security threats, and the requirement to remain interoperable, create a need for recurring updates to the design of avionics hardware and software.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	22.366	26.063	7.582	-	7.582	1.518	0.869	0.606	0.734
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	1.744	4.203	-	4.203	2.034	2.067	-	-
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)					Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CH-47				Modification Type: Unclassified				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 10: Block I CH-47 Safety Mods \$5M or Less													
A Kits													
Recurring													
Voltage Standing Wave Ratio (VSWR)	- / 2.239	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FCTS (FADEC Continuity Test Set)	- / 6.430	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Misc Mods	- / 15.592	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Swashplate Assembly	- / 0.575	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Hook Load Measuring System	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Engine Air Particle Separator (EAPS)	- / 21.195	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
PM Support	- / 11.502	- / 0.274	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Frangible Fuel Fitting	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Recurring	- / 77.533	- / 0.274	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Non-Recurring													
Critical Safety Issues	- / -	1 / 7.414	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Non-Recurring	- / -	1 / 7.414	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Block I CH-47 Safety Mods \$5M or Less	- / 77.533	1 / 7.688	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Modification Item 2 of 10: Block I Software Safety & Avionics Upgrades													
A Kits													
Non-Recurring													
Avionics Updates (CAAS, DAFCS, CPHE)	- / -	- / -	- / 7.512	- / 10.607	- / -	- / 10.607	- / 1.776	- / 0.587	- / -	- / -	- / -	Continuing	Continuing
Safety Impr (DVE, SW Corrections, Cyber)	- / -	- / -	- / -	- / 1.178	- / -	- / 1.178	- / 1.776	- / 2.349	- / 0.606	- / 0.734	- / -	Continuing	Continuing
Subtotal: Non-Recurring	- / -	- / -	- / 7.512	- / 11.785	- / -	- / 11.785	- / 3.552	- / 2.936	- / 0.606	- / 0.734	- / -	Continuing	Continuing
B Kits													
Recurring													
SEPM	- / -	- / -	- / 0.295	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Recurring	- / -	- / -	- / 0.295	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Block I Software Safety & Avionics Upgrades	- / -	- / -	- / 7.807	- / 11.785	- / -	- / 11.785	- / 3.552	- / 2.936	- / 0.606	- / 0.734	- / -	Continuing	Continuing
Modification Item 3 of 10: Block I Improved Vibration Control System (IVCS)													
A Kits													

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)					Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CH-47			Modification Type: Unclassified					Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Recurring													
Kits	- / 114.528	- / -	70 / 14.845	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
PM Support	- / 11.133	- / -	- / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Recurring	- / 115.661	- / -	70 / 15.045	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Block I Improved Vibration Control System (IVCS)	- / 115.661	- / -	70 / 15.045	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Modification Item 4 of 10: Block I Cargo Platform Health Environment (CPHE)													
A Kits													
Recurring													
Kits Type 1	- / 2,515.579	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2,515.579
Kits Type 2	- / 554.381	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 554.381
CPHE Software Upgrade	- / 595.796	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 595.796
Services	- / 57.549	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 57.549
PM Support	- / 11.170	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 11.170
Subtotal: Recurring	- / 3,724.475	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3,724.475
Non-Recurring													
NRE	- / 6.750	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.750
Subtotal: Non-Recurring	- / 6.750	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.750
Subtotal: Block I Cargo Platform Health Environment (CPHE)	- / 3,731.225	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 3,731.225
Modification Item 5 of 10: Improved Troop Seats (ITS)													
A Kits													
Recurring													
Installation Kits	- / -	- / 14.678	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 14.678
Subtotal: Recurring	- / -	- / 14.678	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 14.678
Subtotal: Improved Troop Seats (ITS)	- / -	- / 14.678	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 14.678
Modification Item 6 of 10: Block I Adjustable Pitch Change Link													
A Kits													
Recurring													
Pitch Change Links	- / 2.311	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.311
PM Support	- / 0.158	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.158

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)						Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: CH-47				Modification Type: Unclassified				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<i>Subtotal: Recurring</i>	- / 2.469	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.469
Non-Recurring												
NRE	- / 15.582	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 15.582
<i>Subtotal: Non-Recurring</i>	- / 15.582	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 15.582
<i>Subtotal: Block I Adjustable Pitch Change Link</i>	- / 18.051	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 18.051
Modification Item 7 of 10: Block I COOLS & COOLS BPS												
A Kits												
Recurring												
Cargo Handling Floor System	- / 1,854.411	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1,854.411
Ballistic Protection System (BPS)	- / 333.768	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 333.768
PM Support	- / 4.408	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.408
Cargo Handling Floor System (OCO)	- / 29.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 29.300
PM Support (OCO)	- / 8.010	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.010
<i>Subtotal: Recurring</i>	- / 2,229.897	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2,229.897
<i>Subtotal: Block I COOLS & COOLS BPS</i>	- / 2,229.897	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 2,229.897
Modification Item 8 of 10: Block I Engine Improvements												
A Kits												
Recurring												
T55 Engine Control Unit Prog (ECU)	- / 45.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 45.000
New Engines	- / 4,495.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4,495.000
P3 Check Valve	- / 4.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.900
Next Generation Torque System	- / 14.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 14.500
Logistics	- / 39.953	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 39.953
ECU Upgrade	- / 5.760	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 5.760
RIMFIRE	- / 2.159	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.159
PM Admin Support	- / 4.613	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.613
<i>Subtotal: Recurring</i>	- / 4,611.885	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4,611.885
Non-Recurring												
ECP NRE/Incorporation	- / 1.062	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.062
<i>Subtotal: Non-Recurring</i>	- / 1.062	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.062
<i>Subtotal: Block I Engine Improvements</i>	- / 4,612.947	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 4,612.947

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)						Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CH-47				Modification Type: Unclassified				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Modification Item 9 of 10: Block I Aircraft Component Parts-Marking (UID)													
A Kits													
Non-Recurring													
Component Markings	- / 137.506	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 37.506
Subtotal: Non-Recurring	- / 137.506	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 37.506	
Subtotal: Block I Aircraft Component Parts-Marking (UID)	- / 137.506	- / -	- / -	- / 10.000	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / 37.506	
Modification Item 10 of 10: Block I Systems Optimization & Payload Restoration													
A Kits													
Recurring													
PM Support	- / 17.853	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 17.853
Subtotal: Recurring	- / 17.853	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 17.853	
Non-Recurring													
NRE	- / 157.065	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 157.065
Subtotal: Non-Recurring	- / 157.065	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 157.065	
Subtotal: Block I Systems Optimization & Payload Restoration	- / 164.918	- / -	- / -	- / 10.000	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / 164.918	
Subtotal: Procurement, All Modification Items	- / 10,987.738	1 / 22.366	70 / 22.852	- / 11.785	- / -	- / 11.785	- / 3.552	- / 2.936	- / 0.606	- / 0.734	Continuing	Continuing	
Installation													
Modification Item 3 of 10: Block I Improved Vibration Control System (IVCS)	105 / 0.189	- / -	70 / 4.955	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	890 / 1.702	1,065 / 6.846
Modification Item 4 of 10: Block I Cargo Platform Health Environment (CPHE)	216 / 12.569	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	216 / 12.569
Modification Item 7 of 10: Block I COOLS & COOLS BPS	264 / 19.567	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	264 / 19.567
Subtotal: Installation	585 / 32.325	- / -	70 / 4.955	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	890 / 1.702	1,545 / 38.982
Total													
Total Cost (Procurement + Support + Installation)	11,020.063	22.366	27.807	11.785	-	11.785	3.552	2.936	0.606	0.734	Continuing	Continuing	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 10: Block I CH-47 Safety Mods \$5M or Less							
Manufacturer Information							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Various					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 2 of 10: Block I Software Safety & Avionics Upgrades							
Manufacturer Information							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): TBD					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)	Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 10: Block I Improved Vibration Control System (IVCS)

Manufacturer Information

Manufacturer Name: Boeing	Manufacturer Location: Ridley Park PA
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 6

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	105 / 0.189	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	105 / 0.189
FY 2019	- / -	- / -	70 / 4.955	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	70 / 4.955
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	445 / 0.851	445 / 0.851
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	445 / 0.851	445 / 0.851
Total	105 / 0.189	- / -	70 / 4.955	- / -	- / -	- / -	- / -	- / -	- / -	- / -	890 / 1.702	1,065 / 6.846

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	105	-	-	-	-	-	-	-	24	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	105	-	-	-	-	-	-	-	-	-	12	12	12	12	12	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)	Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 10: Block I Cargo Platform Health Environment (CPHE)

Manufacturer Information

Manufacturer Name: Boeing	Manufacturer Location: Ridley Park, PA
Administrative Leadtime (in Months): 3	Production Leadtime (in Months): 6

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	192 / 11.731	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	192 / 11.731
FY 2018	24 / 0.838	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.838
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	216 / 12.569	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	216 / 12.569

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216
Out	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 5 of 10: Improved Troop Seats (ITS)							
Manufacturer Information							
Manufacturer Name: Boeing				Manufacturer Location: Ridley Park, PA			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 12			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Oct 2019	Oct 2020	Oct 2021		
Delivery Dates			Oct 2020	Oct 2021	Oct 2022		
Installation Information							
Method of Implementation (Organic): Various					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 6 of 10: Block I Adjustable Pitch Change Link							
Manufacturer Information							
Manufacturer Name: Boeing				Manufacturer Location: Ridley Park, PA			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): User Installed					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)	Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 7 of 10: Block I COOLS & COOLS BPS

Manufacturer Information

Manufacturer Name: Boeing	Manufacturer Location: Ridley Park, PA
Administrative Leadtime (in Months): 1	Production Leadtime (in Months): 1

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	214 / 15.822	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	214 / 15.822
FY 2018	50 / 3.745	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	50 / 3.745
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	264 / 19.567	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	264 / 19.567

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	264
Out	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	264

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 8 of 10: Block I Engine Improvements							
Manufacturer Information							
Manufacturer Name: Honeywell Inc				Manufacturer Location: Phoenix, AZ			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Various					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army						Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 9 of 10: Block I Aircraft Component Parts-Marking (UID)							
Manufacturer Information							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Various					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 3264AA0252 / CH-47 Cargo Helicopter Mods (MYP)			Modification Number / Title: AA0252 / CH-47 Cargo Helicopter Mods	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 10 of 10: Block I Systems Optimization & Payload Restoration							
Manufacturer Information							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Various					Installation Quantity: 0		

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3403A02111 / GRCS SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The RC-12X Guardrail Common Sensor (GRCS) is a fixed-wing, airborne Communications Intelligence (COMINT) and Electronic Intelligence (ELINT) collection and precision targeting location system. GRCS provides a persistent capability to detect, locate and classify/identify high value targets with a relevant degree of timeliness and accuracy. GRCS is assigned to two (2) U.S. Army Intelligence and Security Command (INSCOM) Aerial Exploitation Battalions providing Aerial Intelligence, Surveillance and Reconnaissance (AISR) support to combatant commanders. The Army's Acquisition Objective/Army's Procurement Objective is 19 RC-12X; seven (7) fielded to 3rd MI; and seven (7) fielded to the 204th MI, and five (5) trainers within Training and Doctrine Command (TRADOC) and INSCOM.

This funding line supports Army RC-12X aircraft performing the AISR mission. It provides for the following: procurement and associated testing of civil and military aircraft equipment, future integration efforts, and procurement of replacement and spare engines and props. These modifications address all Department of Defense (DoD) mandated safety equipment to current and evolving international and Army Standards. These modifications ensure continued worldwide deployment capability and safe operations. Lastly, this line supports future modifications in service.

The overall GRCS procurement/modernization efforts are found in the following two lines: AZ2052 Guardrail Payloads (Aircraft Procurement Army (APA) Military Intelligence Program (MIP) P-1 Line #21) and A02111 GRCS SEMA MODS (Aircraft Procurement Army (APA) Military Intelligence Program (MIP) P-1 Line #24). Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne intelligence systems to Program Executive Office for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3403A02111 / GRCS SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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-3a	A02111 / Guardrail Common Sensor SEMA Modifications (Unclassified)				- / 8.074	- / 5.514	- / 5.573	- / 5.677	- / 0.750	- / 6.427
P-40	Total Gross/Weapon System Cost				- / 8.074	- / 5.514	- / 5.573	- / 5.677	- / 0.750	- / 6.427

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A02111 / Guardrail Common Sensor SEMA Modifications (Unclassified)				- / 3.700	- / 3.029	- / 3.089	- / 3.179	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 3.700	- / 3.029	- / 3.089	- / 3.179	Continuing	Continuing

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

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

Justification:
 FY20 base procurement funding in the amount of \$5.677 million will support RC-12X aircraft modifications to procure and integrate the 1st Phase Assured Position, Navigation and Timing (A-PNT) solutions (Magna-F); Information Assurance support for aircraft systems; and RC-12X modifications in service. This line also funds the integration of ARC 201 Single Channel Ground Air Radio Systems (SINCGARS) kits to address modernization issues, and modifications to the communications suite to address emerging requirements.

FY20 OCO procurement funding in the amount of \$.750 million will support the RESET of GRCS aircraft supporting contingency operations.

The P3a quantities, prior through FY19, complete the modifications for GATM for the nineteen (19) GRCS aircraft. FY20 quantities reflect the integration of 1st phase A-PNT (Magna-F).

All COMPO 1. In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3403A02111 / GRCS SEMA Mods (MIP)	Modification Number / Title: A02111 / Guardrail Common Sensor SEMA Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The RC-12X Guardrail Common Sensor (GRCS) is a fixed-wing, airborne Communications Intelligence (COMINT) and Electronic Intelligence (ELINT) collection and precision targeting location system. GRCS provides a persistent capability to detect, locate and classify/identify high value targets with a relevant degree of timeliness and accuracy. GRCS is assigned to two (2) U.S. Army INSCOM Aerial Exploitation Battalions providing Aerial Intelligence, Surveillance and Reconnaissance (AISR) support to combatant commanders. The Army's Acquisition Objective/Army's Procurement Objective is nineteen (19) RC-12X: seven (7) fielded to 3rd MI; seven (7) fielded to the 204th MI, and five (5) trainers within TRADOC and INSCOM.

This funding line supports Army RC-12X aircraft performing the AISR mission. It provides for the following: procurement and associated testing of civil and military aircraft equipment, future integration efforts, and procurement of replacement and spare engines and props. These modifications address all Department of Defense (DoD) mandated safety equipment to current and evolving international and Army Standards. These modifications ensure continued worldwide deployment capability and safe operations. Lastly, this line supports future modifications in service.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 3403A02111 / GRCS SEMA Mods (MIP)					Modification Number / Title: A02111 / Guardrail Common Sensor SEMA Modifications				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:							
Models of Systems Affected: RC-12				Modification Type: Unclassified				Related RDT&E PEs:						
Financial Plan	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		
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		
Procurement														
<i>Modification Item 1 of 1: Guardrail Common Sensor SEMA Modifications</i>														
A Kits														
Recurring														
RESET	- / -	- / -	- / -	0 / 0.000	1 / 0.750	1 / 0.750	1 / 0.750	- / -	- / -	- / -	Continuing	Continuing		
PM Costs	- / 1.991	- / 0.551	- / 0.478	- / 0.483	- / -	- / 0.483	- / 0.251	- / 0.257	- / 0.263	- / 0.270	Continuing	Continuing		
Fielding/Training	- / 0.115	- / 0.138	- / 0.051	- / 0.037	- / -	- / 0.037	- / 0.018	- / 0.031	- / 0.034	- / 0.035	Continuing	Continuing		
Spares	- / -	- / 0.144	- / 0.161	- / 0.171	- / -	- / 0.171	- / 0.027	- / 0.311	- / 0.090	- / 0.091	Continuing	Continuing		
<i>Subtotal: Recurring</i>	- / 2.106	- / 0.833	- / 0.690	- / 0.691	1 / 0.750	1 / 1.441	1 / 1.046	- / 0.599	- / 0.387	- / 0.396	Continuing	Continuing		
<i>Subtotal: Guardrail Common Sensor SEMA Modifications</i>	- / 2.106	- / 0.833	- / 0.690	- / 0.691	1 / 0.750	1 / 1.441	1 / 1.046	- / 0.599	- / 0.387	- / 0.396	Continuing	Continuing		
<i>Subtotal: Procurement, All Modification Items</i>	- / 2.106	- / 0.833	- / 0.690	- / 0.691	1 / 0.750	1 / 1.441	1 / 1.046	- / 0.599	- / 0.387	- / 0.396	Continuing	Continuing		
Installation														
<i>Modification Item 1 of 1: Guardrail Common Sensor SEMA Modifications</i>														
<i>Subtotal: Installation</i>	1 / 5.968	6 / 4.681	12 / 4.883	10 / 4.986	- / -	10 / 4.986	9 / 2.654	5 / 2.430	7 / 2.702	7 / 2.783	Continuing	Continuing		
Total														
Total Cost (Procurement + Support + Installation)	8.074	5.514	5.573	5.677	0.750	6.427	3.700	3.029	3.089	3.179	Continuing	Continuing		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3403A02111 / GRCS SEMA Mods (MIP)	Modification Number / Title: A02111 / Guardrail Common Sensor SEMA Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: Guardrail Common Sensor SEMA Modifications

Manufacturer Information

Manufacturer Name: Various	Manufacturer Location: Various
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 2

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

Installation Information

Method of Implementation: Guardrail Common Sensor SEMA Modifications

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 5.968	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2018	- / -	6 / 4.681	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2019	- / -	- / -	12 / 4.883	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2020	- / -	- / -	- / -	10 / 4.986	- / -	10 / 4.986	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	9 / 2.654	- / -	- / -	- / -	Continuing	Continuing
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.430	- / -	- / -	Continuing	Continuing
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 2.702	- / -	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 2.783	Continuing	Continuing
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	1 / 5.968	6 / 4.681	12 / 4.883	10 / 4.986	- / -	10 / 4.986	9 / 2.654	5 / 2.430	7 / 2.702	7 / 2.783	Continuing	Continuing

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot								
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4										
In	1	-	2	3	1	1	3	2	6	1	3	3	3	3	3	3	-	1	-	-	4	-	7	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	57
Out	1	-	2	3	1	1	3	2	6	-	4	3	3	3	3	3	-	-	-	1	4	-	7	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	57

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3404A02110 / ARL SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Airborne Reconnaissance Low - Enhanced (ARL-E) is a worldwide self-deployable airborne Intelligence Surveillance Reconnaissance (ISR) system designed for timely, accurate, assured support to tactical forces over the full spectrum of operations. This system is a De Havilland DHC-8 aircraft replacing the DHC-7 IAW the Aerial ISR (AISR) 2020 Strategy. ARL-E will enhance the ARL-M sensor capability sets through the procurement of new and refurbished sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. It provides a persistent capability to include: Broad-Area Surveillance and/or Focused Stare on Target Areas of Interest (Point or Objective Targets), Electro-Optical/Infrared (EO/IR)/Full-Motion Video (FMV) , Multi-Mode Radar, Robust Communications Intelligence (COMINT), on-Board Collection, Analysis, Sensor Cross Cue and dissemination through Distributed Common Ground System-Army (DCGS-A) enabled workstations. ARL-E will be assigned to the U.S. Army Intelligence and Security Command (INSCOM) Aerial ISR Brigade providing AISR support to combatant commanders. For the overall system, the Army Acquisition Objective and the Army Procurement Objective, is nine (9). The Mission Equipment Package (MEP) objective is eight (8).

The funding line supports the conversion of Government Owned Contractor Operated (GOCO) Quick Reaction Capability (QRC) DeHavilland (DHC) 8-315 Aerial Intelligence Surveillance & Reconnaissance aircraft systems, leveraging seven (7) Saturn Arch (SA) and two (2) Desert Owls (DO). It provides for the following: the procurement of replacement and spare engines; procurement and associated testing of civil and military aircraft equipment, and future integration efforts. These modifications address all Department of Defense (DoD) mandated safety equipment to current and evolving international and Army Standards. These modifications ensure continued worldwide deployment capability and safe operations. Lastly, this line supports future modifications in services which includes Assured Position, Navigation and Timing (A-PNT).

Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne Intelligence systems to Program Executive Officer for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors. The A02110 ARL SEMA Mods (Aircraft Procurement Army (APA) Military Intelligence Program (MIP) P-1 Line #25) budget line provides for aircraft modification and A22050 ARL Payloads (Aircraft Procurement Army (APA) Military Intelligence Program (MIP) P-1 Line #21) provides for sensors.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Army							Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft					P-1 Line Item Number / Title: 3404A02110 / ARL SEMA Mods (MIP)				
ID Code (A=Service Ready, B=Not Service Ready):			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
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
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3404A02110 / ARL SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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-3a	A02110 / ARL SEMA Modifications (Unclassified)				- / 55.095	- / 11.650	- / 7.522	- / 6.566	- / -	- / 6.566
P-40	Total Gross/Weapon System Cost				- / 55.095	- / 11.650	- / 7.522	- / 6.566	- / -	- / 6.566

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A02110 / ARL SEMA Modifications (Unclassified)				- / 9.786	- / 10.532	- / 5.773	- / 6.409	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 9.786	- / 10.532	- / 5.773	- / 6.409	Continuing	Continuing

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

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

Justification:
 The FY20 base procurement funding in the amount of \$6.566 million will be utilized to fund the cockpit and Aircraft Survivability Equipment (ASE) integration of one aircraft and continued system verification and fielding. Additionally, provides funding for modifications in service.

FY20 P3a manufacturer name and location are for ASE integration contract only. Manufacturers for FYDP modifications are to be determined.

All COMPO 1 Active. In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3404A02110 / ARL SEMA Mods (MIP)	Modification Number / Title: A02110 / ARL SEMA Modifications

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	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>)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Airborne Reconnaissance Low - Enhanced (ARL-E) is a worldwide self-deployable airborne Intelligence Surveillance Reconnaissance (ISR) system designed for timely, accurate, assured support to tactical forces over the full spectrum of operations. This system is a De Havilland DHC-8 aircraft replacing the DHC-7 IAW the Aerial ISR (AISR) 2020 Strategy. ARL-E will enhance the ARL-M sensor capability sets through the procurement of new and refurbished sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. It provides a persistent capability to include: Broad-Area Surveillance and/or Focused Stare on Target Areas of Interest (Point or Objective Targets), Electro-Optical/Infrared (EO/IR)/Full-Motion Video (FMV), Multi-Mode Radar, Robust Communications Intelligence (COMINT), on-Board Collection, Analysis, Sensor Cross Cue and dissemination through Distributed Common Ground System-Army (DCGS-A) enabled workstations. ARL-E will be assigned to the U.S. Army INSCOM Aerial ISR Brigade providing AISR support to combatant commanders. For the overall system, the Army Acquisition Objective and the Army Procurement Objective, is nine (9). The Mission Equipment Package (MEP) objective is eight (8).

The funding line supports the conversion of Government Owned Contractor Operated (GOCO) Quick Reaction Capability (QRC) DeHavilland (DHC) 8-315 Aerial Intelligence Surveillance & Reconnaissance aircraft systems, leveraging seven (7) Saturn Arch (SA) and two (2) Desert Owls (DO). It provides for the following: the procurement of replacement and spare engines; procurement and associated testing of civil and military aircraft equipment, and future integration efforts. These modifications address all Department of Defense (DoD) mandated safety equipment to current and evolving international and Army Standards. These modifications ensure continued worldwide deployment capability and safe operations. Lastly, this line supports future modifications in services which includes Assured Position, Navigation and Timing (A-PNT).

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 3404A02110 / ARL SEMA Mods (MIP)						Modification Number / Title: A02110 / ARL SEMA Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: ARL SEMA Modifications				Modification Type: Unclassified					Related RDT&E PEs:				
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1: ARL SEMA Mods</i>													
A Kits													
Recurring													
PMO	- / 10.985	- / 1.165	- / 0.639	- / 0.558	- / -	- / 0.558	- / 0.832	- / 0.895	- / 0.491	- / 0.545	Continuing	Continuing	
Spares	- / 7.042	- / -	- / -	- / -	- / -	- / -	- / 2.724	- / 3.007	- / 2.082	- / -	Continuing	Continuing	
System T&E Support	- / 6.983	- / 10.449	- / 1.046	- / -	- / -	- / -	- / -	- / 0.159	- / 0.162	- / 0.166	Continuing	Continuing	
Training and Documentation	- / 0.023	- / 0.036	- / 0.037	- / 0.037	- / -	- / 0.037	- / 0.038	- / 0.200	- / -	- / -	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 25.033	- / 11.650	- / 1.722	- / 0.595	- / -	- / 0.595	- / 3.594	- / 4.261	- / 2.735	- / 0.711	Continuing	Continuing	
<i>Subtotal: ARL SEMA Mods</i>	- / 25.033	- / 11.650	- / 1.722	- / 0.595	- / -	- / 0.595	- / 3.594	- / 4.261	- / 2.735	- / 0.711	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 25.033	- / 11.650	- / 1.722	- / 0.595	- / -	- / 0.595	- / 3.594	- / 4.261	- / 2.735	- / 0.711	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1: ARL SEMA Mods</i>													
	6 / 30.062	- / -	1 / 5.800	1 / 5.971	- / -	1 / 5.971	1 / 6.192	2 / 6.271	1 / 3.038	2 / 5.698	Continuing	Continuing	
<i>Subtotal: Installation</i>	6 / 30.062	- / -	1 / 5.800	1 / 5.971	- / -	1 / 5.971	1 / 6.192	2 / 6.271	1 / 3.038	2 / 5.698	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	55.095	11.650	7.522	6.566	-	6.566	9.786	10.532	5.773	6.409	Continuing	Continuing	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3404A02110 / ARL SEMA Mods (MIP)	Modification Number / Title: A02110 / ARL SEMA Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: ARL SEMA Mods

Manufacturer Information

Manufacturer Name: LEIDOS	Manufacturer Location: Bridgewater, VA
Administrative Leadtime (in Months): 3	Production Leadtime (in Months): 12

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates	Jul 2018	Jan 2019	Aug 2020	Aug 2021	Aug 2022	Aug 2023	Aug 2024

Installation Information

Method of Implementation: ARL SEMA Mods

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	6 / 30.062	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2019	- / -	- / -	1 / 5.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2020	- / -	- / -	- / -	1 / 5.971	- / -	1 / 5.971	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.192	- / -	- / -	- / -	Continuing	Continuing
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 6.271	- / -	- / -	Continuing	Continuing
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.038	- / -	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 5.698	Continuing	Continuing
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	6 / 30.062	- / -	1 / 5.800	1 / 5.971	- / -	1 / 5.971	1 / 6.192	2 / 6.271	1 / 3.038	2 / 5.698	Continuing	Continuing

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	6	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	2	-	-	1	-	-	-	-	-	2	-	14
Out	3	-	-	-	-	1	2	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	2	-	-	-	-	-	1	2	14

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3405A02112 / EMARSS SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the U.S. Army Intelligence and Security Command (INSCOM) Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the United States Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT). Congressional Plus-up for up to two (2) EMARSS-E aircraft.

The budget line supports the conversion of Special Electronic Mission Aircraft (SEMA) Government-owned Quick Reaction Capability (QRC) Aerial Intelligence Surveillance & Reconnaissance (AISR) systems: Liberty Project Aircraft (LPA), Constant Hawk (CH) and Tactical Operations (TACOP), VaDER (Vehicle and Dismount exploitation Radar) into Enhanced Medium Altitude Reconnaissance and Surveillance Systems (EMARSS) Capabilities Production Document (CPD) compliant systems. It provides for the following: the procurement of replacement and spare engines; procurement and associated testing of civil and military aircraft equipment; and integration/installation of ISR Mission Equipment Package (MEP). These modifications address all Department of Defense (DoD) mandated safety equipment to current and evolving international and Army Standards. These modifications ensure continued worldwide deployment capability and safe operations. Lastly, this line supports future modifications in service.

The overall EMARSS procurement/modernization efforts are found in the following two lines; AZ2054 EMARSS Payloads (Aircraft Procurement Army (APA) Military Intelligence Program (MIP) P-1 Line #21) line provides for sensors and A02112 EMARSS SEMA Mods (Aircraft Procurement Army (APA) Military Intelligence Program (MIP) P-1 Line #26) provides for aircraft modifications. Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne intelligence systems to Program Executive Officer for Aviation; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374
Total:									
Quantity	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3405A02112 / EMARSS SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374

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UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 3405A02112 / EMARSS SEMA Mods (MIP)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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-3a	A02112 / EMARSS SEMA Modifications (Unclassified)				- / 83.066	- / 51.279	- / 60.248	- / 3.859	- / 22.180	- / 26.039
P-40	Total Gross/Weapon System Cost				- / 83.066	- / 51.279	- / 60.248	- / 3.859	- / 22.180	- / 26.039

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A02112 / EMARSS SEMA Modifications (Unclassified)				- / 24.812	- / 1.903	- / 1.940	- / 2.374	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 24.812	- / 1.903	- / 1.940	- / 2.374	Continuing	Continuing

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

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

Justification:
 FY20 Base Procurement dollars in the amount of \$3.859 million supports modifications in service, such as the procurement of Mission Enhancement Kits (MEK). Mission Enhancement kits include PT6A-67A engines, light weight composite propellers, light weight lithium ion batteries and anti-lock braking system which are designed to increase endurance, increase safety, and reduce risk in the extreme environmental conditions of high altitude combined with hot temperature conditions. Mission Enhancement Kits will increase operational capability by allowing the aircraft to carry more fuel, which equates to more time on station. Modifications in service also include modernized avionics, such as Assured Position, Navigation and Timing (A-PNT), cockpit management unit, Blue Force Tracking-Aviation (BFT-AVN) to BFT-2 conversion, APX-123 Transponder to APX-119 Transponder and Aircraft Survivability Equipment (ASE) integration.

FY20 OCO Procurement dollars in the amount of \$22.180 million supports the procurement of Mission Enhancement Kits and the RESET of EMARSS aircraft.

Per Army Directed Requirement, the FY19 Congressional Plus-up of \$39.800 million authorizes the Army to modify up to 2 (two) EMARSS-E aircraft.

P3a quantities prior through FY18 are for aircraft integration. Starting FY19, quantities are for modifications in service to previously delivered aircraft.

P3a manufacturer name and location are for aircraft integration contract only. Modifications in service contracts are to be determined.

All COMPO 1 Active. In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 3405A02112 / EMARSS SEMA Mods (MIP)	Modification Number / Title: A02112 / EMARSS SEMA Modifications

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	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the U.S. Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the United States Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT). Congressional Plus-up for up to two (2) EMARSS-E aircraft.

The budget line supports the conversion of Special Electronic Mission Aircraft (SEMA) Government-owned Quick Reaction Capability (QRC) Aerial Intelligence Surveillance & Reconnaissance (AISR) systems: Liberty Project Aircraft (LPA), Constant Hawk (CH) and Tactical Operations (TACOP), VaDER (Vehicle and Dismount exploitation Radar) into Enhanced Medium Altitude Reconnaissance and Surveillance Systems (EMARSS) Capabilities Production Document (CPD) compliant systems. It provides for the following: the procurement of replacement and spare engines; procurement and associated testing of civil and military aircraft equipment; and integration/installation of ISR Mission Equipment Package (MEP). These modifications address all Department of Defense (DoD) mandated safety equipment to current and evolving international and Army Standards. These modifications ensure continued worldwide deployment capability and safe operations. Lastly, this line supports future modifications in service.

The APO quantity of 24 is funded as follows: Aerial Common Sensor (ACS) (MIP) (A02005) FY14-FY16 modified 16. EMARSS SEMA Mods (MIP) (A02112) and EMARSS Payloads (MIP) (AZ2054) FY17-FY18, will modify the remaining 8.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 3405A02112 / EMARSS SEMA Mods (MIP)					Modification Number / Title: A02112 / EMARSS SEMA Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: EMARSS				Modification Type: Unclassified				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1: EMARSS SEMA Modifications</i>													
A Kits													
Recurring													
EMARSS-E Pods	- / -	- / -	- / 39.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
RESET	- / -	- / -	- / -	0 / 0.000	4 / 5.080	4 / 5.080	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
EMARSS Performance Enhancements	- / 23.100	- / -	4 / 15.800	0 / 0.000	4 / 17.100	4 / 17.100	5 / 22.180	- / -	- / -	- / -	- / -	Continuing	Continuing
PMO and SETA Support	- / 15.858	- / 1.528	- / 1.738	- / 0.328	- / -	- / 0.328	- / 0.224	- / 0.162	- / 0.165	- / 0.202	- / -	Continuing	Continuing
Initial Spares	- / 1.905	- / 0.528	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Testing	- / 1.580	- / 0.608	- / -	- / 0.545	- / -	- / 0.545	- / 0.594	- / -	- / -	- / -	- / -	Continuing	Continuing
<i>Subtotal: Recurring</i>	<i>- / 32.443</i>	<i>- / 2.664</i>	<i>4 / 57.338</i>	<i>- / 0.873</i>	<i>8 / 22.180</i>	<i>8 / 23.053</i>	<i>5 / 22.998</i>	<i>- / 0.162</i>	<i>- / 0.165</i>	<i>- / 0.202</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: EMARSS SEMA Modifications</i>	<i>- / 32.443</i>	<i>- / 2.664</i>	<i>4 / 57.338</i>	<i>- / 0.873</i>	<i>8 / 22.180</i>	<i>8 / 23.053</i>	<i>5 / 22.998</i>	<i>- / 0.162</i>	<i>- / 0.165</i>	<i>- / 0.202</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 32.443</i>	<i>- / 2.664</i>	<i>4 / 57.338</i>	<i>- / 0.873</i>	<i>8 / 22.180</i>	<i>8 / 23.053</i>	<i>5 / 22.998</i>	<i>- / 0.162</i>	<i>- / 0.165</i>	<i>- / 0.202</i>	<i>Continuing</i>	<i>Continuing</i>	
Installation													
<i>Modification Item 1 of 1: EMARSS SEMA Modifications</i>	6 / 50.623	4 / 48.615	1 / 2.910	1 / 2.986	- / -	1 / 2.986	1 / 1.814	1 / 1.741	1 / 1.775	1 / 2.172	Continuing	Continuing	
<i>Subtotal: Installation</i>	<i>6 / 50.623</i>	<i>4 / 48.615</i>	<i>1 / 2.910</i>	<i>1 / 2.986</i>	<i>- / -</i>	<i>1 / 2.986</i>	<i>1 / 1.814</i>	<i>1 / 1.741</i>	<i>1 / 1.775</i>	<i>1 / 2.172</i>	<i>Continuing</i>	<i>Continuing</i>	
Total													
Total Cost (Procurement + Support + Installation)	83.066	51.279	60.248	3.859	22.180	26.039	24.812	1.903	1.940	2.374	Continuing	Continuing	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 3405A02112 / EMARSS SEMA Mods (MIP)						Modification Number / Title: A02112 / EMARSS SEMA Modifications																				
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																				
Modification Item 1 of 1: EMARSS SEMA Modifications																															
Manufacturer Information																															
Manufacturer Name: SNC											Manufacturer Location: Hagerstown, MD																				
Administrative Leadtime (in Months): 2											Production Leadtime (in Months): 6																				
Dates		FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024											
Contract Dates																															
Delivery Dates					Mar 2019			Mar 2020			Mar 2021			Mar 2022			Mar 2023			Mar 2024											
Installation Information																															
Method of Implementation: EMARSS Modifications																															
Installation Cost		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																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		6 / 50.623	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
FY 2018		- / -	4 / 48.615	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
FY 2019		- / -	- / -	1 / 2.910	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
FY 2020		- / -	- / -	- / -	1 / 2.986	- / -	1 / 2.986	- / -	- / -	- / -	- / -	Continuing	Continuing																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.814	- / -	- / -	- / -	Continuing	Continuing																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.741	- / -	- / -	Continuing	Continuing																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.775	- / -	Continuing	Continuing																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.172	Continuing	Continuing																		
To Complete		0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Total		6 / 50.623	4 / 48.615	1 / 2.910	1 / 2.986	- / -	1 / 2.986	1 / 1.814	1 / 1.741	1 / 1.775	1 / 2.172	Continuing	Continuing																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	4	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	16
Out	6	-	-	-	-	-	1	3	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	16

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 4194AA0270 / Utility/Cargo Airplane Mods
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The budget line supports the updates and modernization of Army Fixed Wing Aircraft communication, navigation, surveillance, survivability equipment, and Department of Defense (DoD) mandated safety equipment to current and evolving international and Army standards. The budget line provides for the procurement of replacement and spare engines for Fixed Wing Aircraft. In addition, it provides for the procurement and associated testing of civil and military aircraft modification equipment. This budget line will also be used to modify Fixed Wing Aircraft to include Engineer, Furnish and Install (EF&I) of modifications as a complete contractual effort. It also leverages Federal Aviation Administration (FAA) supplemental type certificates (STC) that are already in existence and applies STCs to aircraft modifications. These modifications ensure continued worldwide deployment capability and safe operations. This Procurement line funds aircraft modifications for all three (3) Compos; Active, Army National Guard, and Army Reserve.

Average unit cost is variable and dependent upon aircraft selection and requirements.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	44.413	6.422	12.381	8.362	20.743	18.773	-	-	-
ANG									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	-	-	3.095	-	3.095	3.471	-	-	-
AR									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	13.324	11.297	-	-	-	-	-	-	-
Total: Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft

P-1 Line Item Number / Title:
4194AA0270 / Utility/Cargo Airplane Mods

ID Code (A=Service Ready, B=Not Service Ready): **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-3a	AA0270 / Fixed Wing Aircraft Modifications (Rationalization, Standardization, Interoperability, Compatibility, Simplification)				- / 306.951	- / 57.737	- / 17.719	- / 15.476	- / 8.362	- / 23.838
P-40	Total Gross/Weapon System Cost				- / 306.951	- / 57.737	- / 17.719	- / 15.476	- / 8.362	- / 23.838

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA0270 / Fixed Wing Aircraft Modifications (Rationalization, Standardization, Interoperability, Compatibility, Simplification)				- / 22.244	- / -	- / -	- / -	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 22.244	- / -	- / -	- / -	Continuing	Continuing

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

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

Justification:
FY 2020 Base procurement dollars in the amount of \$15.476 million supports aircraft modifications to Communications, Navigation, and Surveillance (CNS), Aircraft Survivability Equipment (ASE), and future modifications in service that meets current and future air traffic management requirements.

In addition, equipment included in the modifications will enhance the safety of passengers and crew. The upgrades will also permit the Army Fixed Wing Aircraft to operate in compliance with other existing and emerging regulations. As requirement for new avionics equipment continue, aircraft delays and airspace exclusions are likely for aircraft not properly equipped. Upgrade of communication and navigation systems will enhance reliability and maintainability, thereby improving aircraft availability for mission requirements. The associated aircraft modifications will assure worldwide deployability for those required to deploy. This Procurement line funds aircraft modifications for all three (3) Compos; Active, Army National Guard, and Army Reserve.

FY 2020 OCO procurement dollars in the amount of \$8.362 million supports the Fixed Wing Aircraft in support of Contingency Operations. The modifications will include Communications, Navigation and Surveillance (CNS) and Aircraft Survivability Equipment (ASE).

Comments:
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 4194AA0270 / Utility/Cargo Airplane Mods	Modification Number / Title: AA0270 / Fixed Wing Aircraft Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The budget line supports the updates and modernization of Army Fixed Wing Aircraft communication, navigation, surveillance, survivability equipment, and Department of Defense (DoD) mandated safety equipment to current and evolving international and Army standards. The budget line provides for the procurement of replacement and spare engines for fixed wing aircraft. In addition, it provides for the procurement and associated testing of civil and military aircraft modification equipment. This budget line will also be used to modify fixed wing aircraft to include Engineer, Furnish and Install (EF&I) of modifications as a complete contractual effort. It also leverages Federal Aviation Administration (FAA) supplemental type certificates (STC) that are already in existence and applies STCs to aircraft modifications. These modifications ensure continued worldwide deployment capability and safe operations. This Procurement line funds aircraft modifications for all three (3) Compos; Active, Army National Guard, and Army Reserve.

Average unit cost on the P3a are variable and dependent upon aircraft selection and requirements.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	44.413	6.422	12.381	8.362	20.743	18.773	-	-	-
ANG									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	-	-	3.095	-	3.095	3.471	-	-	-
AR									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	13.324	11.297	-	-	-	-	-	-	-
Total: Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 4194AA0270 / Utility/Cargo Airplane Mods					Modification Number / Title: AA0270 / Fixed Wing Aircraft Modifications				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: All series Army fixed wing aircraft				Modification Type: Rationalization, Standardization, Interoperability, Compatibility, Simplification				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1: Fixed Wing Aircraft Modifications</i>													
A Kits													
Recurring													
Installation Kits	271 / 184.002	47 / 34.642	11 / 10.631	4 / 7.894	6 / 4.264	10 / 12.158	14 / 9.889	- / -	- / -	- / -	- / 0.000	353 / 251.322	
Data	- / 1.536	- / 0.289	- / 0.089	- / 0.077	- / 0.042	- / 0.119	- / 0.070	- / -	- / -	- / -	Continuing	Continuing	
Program Management	- / -	- / 3.464	- / 1.063	- / 1.315	- / -	- / 1.315	- / 1.179	- / -	- / -	- / -	Continuing	Continuing	
<i>Subtotal: Recurring</i>	<i>271 / 185.538</i>	<i>47 / 38.395</i>	<i>11 / 11.783</i>	<i>4 / 9.286</i>	<i>6 / 4.306</i>	<i>10 / 13.592</i>	<i>14 / 11.138</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Fixed Wing Aircraft Modifications</i>	<i>271 / 185.538</i>	<i>47 / 38.395</i>	<i>11 / 11.783</i>	<i>4 / 9.286</i>	<i>6 / 4.306</i>	<i>10 / 13.592</i>	<i>14 / 11.138</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>271 / 185.538</i>	<i>47 / 38.395</i>	<i>11 / 11.783</i>	<i>4 / 9.286</i>	<i>6 / 4.306</i>	<i>10 / 13.592</i>	<i>14 / 11.138</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>Continuing</i>	<i>Continuing</i>	
Installation													
<i>Modification Item 1 of 1: Fixed Wing Aircraft Modifications</i>	271 / 121.413	47 / 19.342	11 / 5.936	4 / 6.190	6 / 4.056	10 / 10.246	14 / 11.106	- / -	- / -	- / -	- / -	353 / 168.043	
<i>Subtotal: Installation</i>	<i>271 / 121.413</i>	<i>47 / 19.342</i>	<i>11 / 5.936</i>	<i>4 / 6.190</i>	<i>6 / 4.056</i>	<i>10 / 10.246</i>	<i>14 / 11.106</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>353 / 168.043</i>	
Total													
Total Cost (Procurement + Support + Installation)	306.951	57.737	17.719	15.476	8.362	23.838	22.244	-	-	-	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 4194AA0270 / Utility/Cargo Airplane Mods	Modification Number / Title: AA0270 / Fixed Wing Aircraft Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: Fixed Wing Aircraft Modifications

Manufacturer Information

Manufacturer Name: Multiple Commercial Vendors	Manufacturer Location: TBD
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 6

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

Installation Information

Method of Implementation: Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	271 / 121.413	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	271 / 121.413
FY 2018	- / -	47 / 19.342	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	47 / 19.342
FY 2019	- / -	- / -	11 / 5.936	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 5.936
FY 2020	- / -	- / -	- / -	4 / 6.190	6 / 4.056	10 / 10.246	- / -	- / -	- / -	- / -	- / -	10 / 10.246
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	14 / 11.106	- / -	- / -	- / -	- / -	14 / 11.106
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	271 / 121.413	47 / 19.342	11 / 5.936	4 / 6.190	6 / 4.056	10 / 10.246	14 / 11.106	- / -	- / -	- / -	- / -	353 / 168.043

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	271	11	12	12	12	2	3	3	3	2	2	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	269	2	11	12	12	12	2	3	3	3	2	2	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	1,592.796	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,813.118
Less PY Advance Procurement (<i>\$ in Millions</i>)	13.500	-	-	-	-	-	-	-	-	-	-	13.500
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,579.296	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,799.618
Plus CY Advance Procurement (<i>\$ in Millions</i>)	13.500	-	-	-	-	-	-	-	-	-	-	13.500
Total Obligation Authority (<i>\$ in Millions</i>)	1,592.796	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,813.118

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Utility Helicopter Mods include modifications to the UH-60 Black Hawk and the UH-72A Lakota helicopters. The UH-60 Black Hawk helicopter is the Army's utility helicopter for the near and midterm force. It is a twin engine, single rotor, four bladed utility helicopter used for air assault, general support, command & control, and aero-medical evacuations (MEDEVAC). The UH-60 is joint force capable, providing 24 hour/day support including operations at night and in adverse weather conditions. The UH-60 is designed to carry a crew of four plus eleven combat equipped troops or an external load up to 9,000 pounds. The UH-60 Black Hawk was fielded in 1978 as a replacement for the UH-1. From 1978 to 1988, UH-60As were produced. In 1989 production of UH-60Ls with improved engines and drive train began. In 2007, full rate production of UH-60Ms began which provided a digital cockpit, digital Flight Management System (FMS), improved engine, and wide-cord main rotor blades. The UH-72A Lakota helicopter provides general aviation support for aviation units in the active and reserve components.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft **P-1 Line Item Number / Title:** 6949AA0480 / Utility Helicopter Mods

ID Code (A=Service Ready, B=Not Service Ready): **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-3a	AA0492 / Utility Helicopter Modifications (Operational)				- / 1,592.796	- / 50.709	- / 32.443	- / 6.744	- / -	- / 6.744
P-40	Total Gross/Weapon System Cost				- / 1,592.796	- / 50.709	- / 32.443	- / 6.744	- / -	- / 6.744

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA0492 / Utility Helicopter Modifications (Operational)				- / 25.868	- / 34.384	- / 34.996	- / 35.178	- / -	- / 1,813.118
P-40	Total Gross/Weapon System Cost				- / 25.868	- / 34.384	- / 34.996	- / 35.178	- / -	- / 1,813.118

*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:
 FY20 Base Procurement dollars in the amount of \$6.744 million will install Electronic Standby Instrument Systems (ESIS). ESIS functions include: Attitude Indication, Slip/Skid Indication, Airspeed, Heading, Altitude, and Vertical Speed. The system consists of the GH-4001 Backup Attitude Indicator (BAI), MAG-3000 Magnetometer, and Emergency Power Supply. To offset the effects of a dual Attitude Heading Reference Unit (AHRU) failure, installation of a BAI is required to provide attitude information to the pilots in the event a single/dual Fiber Optic Gyro (FOG) failure occurs. The GH-4001 serves as the best long-term solution to the fleet. In order to comply with Army SOF H-60-13-SOF-1, the UH-60A/L is required to have Electronic Standby Instrument System (ESIS) along with dual Attitude Heading Reference System (AHRS).

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	1,592.796	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,813.118
Less PY Advance Procurement (\$ in Millions)	13.500	-	-	-	-	-	-	-	-	-	-	13.500
Net Procurement (P-1) (\$ in Millions)	1,579.296	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,799.618
Plus CY Advance Procurement (\$ in Millions)	13.500	-	-	-	-	-	-	-	-	-	-	13.500
Total Obligation Authority (\$ in Millions)	1,592.796	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,813.118

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Utility Helicopter Mods include modifications to the UH-60 Black Hawk and the UH-72A Lakota helicopter.

FY20 Base Procurement dollars in the amount of \$6.744 million will install Electronic Standby Instrument Systems (ESIS). ESIS functions include: Attitude Indication, Slip/Skid Indication, Airspeed, Heading, Altitude, and Vertical Speed. The system consists of the GH-4001 Backup Attitude Indicator (BAI), MAG-3000 Magnetometer, and Emergency Power Supply. To offset the effects of a dual Attitude Heading Reference Unit (AHRU) failure, installation of a BAI is required to provide attitude information to the pilots in the event a single/dual Fiber Optic Gyro (FOG) failure occurs. The GH-4001 serves as the best long-term solution to the fleet. In order to comply with Army SOF H-60-13-SOF-1, the UH-60A/L is required to have Electronic Standby Instrument System (ESIS) along with dual Attitude Heading Reference System (AHRS).

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods					Modification Number / Title: AA0492 / Utility Helicopter Modifications				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:							
Models of Systems Affected: UH-60L				Modification Type: Operational				Related RDT&E PEs:						
Financial Plan	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		
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		
Procurement														
Modification Item 1 of 12: UH-60A to UH-60L Conversion														
A Kits														
Recurring														
other	276 / 375.248	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	276 / 375.248		
Subtotal: Recurring	276 / 375.248	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	276 / 375.248		
Non-Recurring														
other	- / 970.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 970.656		
Subtotal: Non-Recurring	- / 970.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 970.656		
Subtotal: UH-60A to UH-60L Conversion	276 / 1,345.904	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	276 / 1,345.904		
Modification Item 2 of 12: External High Speed Hoist														
A Kits														
Recurring														
Other	285 / 82.321	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	285 / 82.321		
Subtotal: Recurring	285 / 82.321	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	285 / 82.321		
Subtotal: External High Speed Hoist	285 / 82.321	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	285 / 82.321		
Modification Item 3 of 12: Upturned Exhaust System (UES)														
A Kits														
Non-Recurring														
Non Recurring	- / 1.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.000		
Subtotal: Non-Recurring	- / 1.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000		
Subtotal: Upturned Exhaust System (UES)	- / 1.000	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 1.000		
Modification Item 4 of 12: Backup Altitude Indicators														
A Kits														
Recurring														
Kit Quantity	265 / 14.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	265 / 14.000		
Subtotal: Recurring	265 / 14.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	265 / 14.000		
Subtotal: Backup Altitude Indicators	265 / 14.000	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	265 / 14.000		
Modification Item 5 of 12: Crashworthy External Fuel System (CEFS)														

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods					Modification Number / Title: AA0492 / Utility Helicopter Modifications		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: UH-60L				Modification Type: Operational				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
A Kits												
Recurring												
A-Kits (A/L)	822 / 45.857	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	822 / 45.857
A-Kits (GFE to Production)	32 / 2.700	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	32 / 2.700
A-Kits (GFE to SAR Act)	10 / 0.600	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	10 / 0.600
B-kits	431 / 56.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	431 / 56.200
Support Equipment/Other	- / 32.935	- / 1.628	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 34.563
Subtotal: Recurring	1,295 / 138.292	- / 1.628	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,295 / 139.920
Subtotal: Crashworthy External Fuel System (CEFS)	1,295 / 138.292	- / 1.628	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	1,295 / 139.920
Modification Item 6 of 12: Engine Inlet Barrier Filter (EIBF)												
A Kits												
Recurring												
EIBF A-Kit	- / -	30 / 0.840	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	30 / 0.840
Subtotal: Recurring	- / -	30 / 0.840	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	30 / 0.840
B Kits												
Recurring												
EIBF B-Kit	- / -	50 / 5.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	50 / 5.500
Subtotal: Recurring	- / -	50 / 5.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	50 / 5.500
Subtotal: Engine Inlet Barrier Filter (EIBF)	- / -	80 / 6.340	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	80 / 6.340
Modification Item 7 of 12: Enhanced Ballistic Armor Protection System (EBAPS)												
A Kits												
Recurring												
EBAPs Kit	- / -	148 / 10.640	130 / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	278 / 20.640
Other	- / 15.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 15.000
Subtotal: Recurring	- / 15.000	148 / 10.640	130 / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	278 / 25.640
Subtotal: Enhanced Ballistic Armor Protection System (EBAPS)	- / 15.000	148 / 10.640	130 / 10.000	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	278 / 25.640
Modification Item 8 of 12: UH-72 Sustainability Improvements												
A Kits												
Non-Recurring												

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods						Modification Number / Title: AA0492 / Utility Helicopter Modifications		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: UH-60L				Modification Type: Operational				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
UH-72 Sustainability Improvements	- / -	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.000
<i>Subtotal: Non-Recurring</i>	- / -	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.000
<i>Subtotal: UH-72 Sustainability Improvements</i>	- / -	- / -	- / 10.000	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 10.000
Modification Item 9 of 12: UH-60M Weight Reduction - Tail Rotor System Design												
A Kits												
Non-Recurring												
UH-60M Weight Reduction Tail Rotor Desig	- / -	- / -	- / 16.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 16.000
<i>Subtotal: Non-Recurring</i>	- / -	- / -	- / 16.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 16.000
<i>Subtotal: UH-60M Weight Reduction - Tail Rotor System Design</i>	- / -	- / -	- / 16.000	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 16.000
Modification Item 10 of 12: Electronic Standby Instrument System (ESIS)												
A Kits												
Recurring												
A Kit Recurring	- / -	33 / 4.877	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	33 / 4.877
<i>Subtotal: Recurring</i>	- / -	33 / 4.877	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	33 / 4.877
B Kits												
Recurring												
B Kit Recurring	- / -	26 / 4.804	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	26 / 4.804
<i>Subtotal: Recurring</i>	- / -	26 / 4.804	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	26 / 4.804
<i>Subtotal: Electronic Standby Instrument System (ESIS)</i>	- / -	59 / 9.681	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	59 / 9.681
Modification Item 11 of 12: Generators 60 kVA												
B Kits												
Recurring												
Generator B-Kits	- / -	90 / 12.615	- / -	- / -	- / -	- / -	47 / 5.926	24 / 3.026	232 / 29.717	21 / 2.835	- / 0.000	414 / 54.119
<i>Subtotal: Recurring</i>	- / -	90 / 12.615	- / -	- / -	- / -	- / -	47 / 5.926	24 / 3.026	232 / 29.717	21 / 2.835	- / -	414 / 54.119
<i>Subtotal: Generators 60 kVA</i>	- / -	90 / 12.615	- / -	- / 0.000	- / -	- / 0.000	47 / 5.926	24 / 3.026	232 / 29.717	21 / 2.835	- / -	414 / 54.119
Modification Item 12 of 12: Upturned Exhaust System II (UES II)												
B Kits												
Recurring												

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods				Modification Number / Title: AA0492 / Utility Helicopter Modifications				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: UH-60L			Modification Type: Operational				Related RDT&E PEs:					
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
B Kit Recurring	- / -	- / -	- / -	- / -	- / -	- / -	72 / 13.993	150 / 29.533	- / -	147 / 30.409	- / 0.000	369 / 73.935
<i>Subtotal: Recurring</i>	- / -	- / -	- / -	- / -	- / -	- / -	72 / 13.993	150 / 29.533	- / -	147 / 30.409	- / -	369 / 73.935
<i>Subtotal: Upturned Exhaust System II (UES II)</i>	- / -	- / -	- / -	- / 0.000	- / -	- / 0.000	72 / 13.993	150 / 29.533	- / -	147 / 30.409	- / -	369 / 73.935
<i>Subtotal: Procurement, All Modification Items</i>	2,121 / 1,586.517	377 / 40.904	130 / 26.000	- / -	- / -	- / -	119 / 19.919	174 / 32.559	232 / 29.717	168 / 33.244	- / -	3,321 / 1,768.860
Installation												
Modification Item 5 of 12: Crashworthy External Fuel System (CEFS)	431 / 6.279	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	431 / 6.279
Modification Item 6 of 12: Engine Inlet Barrier Filter (EIBF)	- / -	30 / 3.513	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	30 / 3.513
Modification Item 10 of 12: Electronic Standby Instrument System (ESIS)	- / -	80 / 6.292	82 / 6.443	84 / 6.744	- / -	84 / 6.744	62 / 5.074	- / -	62 / 5.279	- / -	- / -	370 / 29.832
Modification Item 12 of 12: Upturned Exhaust System II (UES II)	- / -	- / -	- / -	- / -	- / -	- / -	72 / 0.875	150 / 1.825	- / -	147 / 1.934	- / -	369 / 4.634
<i>Subtotal: Installation</i>	431 / 6.279	110 / 9.805	82 / 6.443	84 / 6.744	- / -	84 / 6.744	134 / 5.949	150 / 1.825	62 / 5.279	147 / 1.934	- / -	1,200 / 44.258
Total												
Total Cost (Procurement + Support + Installation)	1,592.796	50.709	32.443	6.744	-	6.744	25.868	34.384	34.996	35.178	-	1,813.118

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 12: UH-60A to UH-60L Conversion

Manufacturer Information

Manufacturer Name: Corpus Christi Army Depot	Manufacturer Location: Corpus Christi Army Depot
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Depot

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276
Out	276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 12: External High Speed Hoist

Manufacturer Information

Manufacturer Name: Breeze Eastern, Inc	Manufacturer Location: Whippany, NJ
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Organic

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285
Out	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 12: Upturned Exhaust System (UES)

Manufacturer Information

Manufacturer Name: Undetermined	Manufacturer Location: Undetermined
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Organic

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	FY 2018	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 12: Backup Altitude Indicators

Manufacturer Information

Manufacturer Name: PIF	Manufacturer Location: Redstone Arsenal Alabama
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Organic

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265
Out	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 5 of 12: Crashworthy External Fuel System (CEFS)

Manufacturer Information

Manufacturer Name: Robertson Fuel Systems, LLC	Manufacturer Location: Tempe, AZ
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Organic

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	431 / 6.279	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	431 / 6.279
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	431 / 6.279	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	431 / 6.279

Installation Schedule

PYS	FY 2018	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	431
Out	431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	431

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 6 of 12: Engine Inlet Barrier Filter (EIBF)

Manufacturer Information

Manufacturer Name: Donaldson Aerospace & Defense	Manufacturer Location: St Louis MO
Administrative Leadtime (in Months): 1	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	30 / 3.513	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	30 / 3.513
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	30 / 3.513	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	30 / 3.513

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 7 of 12: Enhanced Ballistic Armor Protection System (EBAPS)

Manufacturer Information

Manufacturer Name: LSF FY18 TPG FY19-20				Manufacturer Location: Miami Lakes, Florida			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Organic

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 8 of 12: UH-72 Sustainability Improvements

Manufacturer Information

Manufacturer Name: Undetermined	Manufacturer Location: Undetermined
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 9 of 12: UH-60M Weight Reduction - Tail Rotor System Design

Manufacturer Information

Manufacturer Name: Undetermined	Manufacturer Location: Undetermined
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 10 of 12: Electronic Standby Instrument System (ESIS)

Manufacturer Information

Manufacturer Name: L-3	Manufacturer Location: Grand Rapids MI
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 12

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Mar 2018			Mar 2021		Mar 2023	
Delivery Dates	Mar 2019			Mar 2022		Mar 2024	

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	80 / 6.292	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	80 / 6.292
FY 2020	- / -	- / -	82 / 6.443	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	82 / 6.443
FY 2021	- / -	- / -	- / -	84 / 6.744	- / -	84 / 6.744	- / -	- / -	- / -	- / -	- / -	84 / 6.744
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	62 / 5.074	- / -	- / -	- / -	- / -	62 / 5.074
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 5.279	- / -	- / -	62 / 5.279
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	80 / 6.292	82 / 6.443	84 / 6.744	- / -	84 / 6.744	62 / 5.074	- / -	62 / 5.279	- / -	- / -	370 / 29.832

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 11 of 12: Generators 60 kVA

Manufacturer Information

Manufacturer Name: Undetermined Manufacturer Location: Undetermined

Administrative Leadtime (in Months): Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 6949AA0480 / Utility Helicopter Mods	Modification Number / Title: AA0492 / Utility Helicopter Modifications

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 12 of 12: Upturned Exhaust System II (UES II)

Manufacturer Information

Manufacturer Name: Sikorsky	Manufacturer Location: Stratford CT
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: Various

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	72 / 0.875	- / -	- / -	- / -	- / -	72 / 0.875
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	150 / 1.825	- / -	- / -	- / -	150 / 1.825
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	147 / 1.934	- / -	147 / 1.934
Total	- / -	- / -	- / -	- / -	- / -	- / -	72 / 0.875	150 / 1.825	- / -	147 / 1.934	- / -	369 / 4.634

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604201A
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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>)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Network and Mission Plan budget line includes the Aviation Mission Planning System (AMPS), the Improved Data Modem (IDM), the Aviation Data Exploitation Capability (ADEC), and the Aircraft Notebook (ACN).

The AMPS provides automated mission planning, risk assessment and transfer of mission data to Army Aviation platforms in support of Mission Command functions within Aviation units. The AMPS system supports pre-mission planning and rehearsal, including route planning, communications planning, and aircraft configuration. AMPS has the ability to generate mission data in either hard copy or electronic formats. The electronic formats are loaded onto the aircraft platforms utilizing a Data Transfer Device initializing the communication, navigation, and weapons systems on the aircraft. Supported aircraft include the AH-64D/E, CH-47F, UH-60L/M/Q, and HH-60M, and also Handheld applications. Support for the Enhanced Medium Altitude Reconnaissance Surveillance System (EMARSS), UH-60V, AH-64E V6, and Unmanned Aircraft Systems (UAS) in the U.S. baseline will be provided in a future release. The AMPS supports Fixed Wing aircraft with Take Off Landing Distance calculators, AH-64 aircraft with a mobile Maintenance Test Flight Calculator and Army Rotary Wing aircraft with Integrated Performance Aircraft Configuration Tool/Flight Performance Models for performance and Weight and Balance planning. The AMPS program includes management of the Commander's Aviation Risk Tool and the Centralized Aviation Flight Records System (CAFRS). The AMPS hardware is replaced after five years of use to accommodate rapid commercial technology changes. The AMPS program manages and supports FliteScene Software licenses, maintenance agreements, and related engineering services. FliteScene is a digital map technology application that provides enhanced navigation capabilities to the military flight crew. FliteScene Digital Map is a high performance, combat proven, digital map software product. FliteScene Digital Map software forward-looking capabilities enhance mission effectiveness and include presentation of weather, contour lines, slope shading, dynamic elevation banding, threat depiction, variable scaling, and symbology overlays.

The IDM is the common solution for digitizing Army Aviation and is fielded on every modernized, rotary-wing Army aircraft, including the CH-47 Chinook, AH-64 Apache and UH-60 Black Hawk. The IDM provides the Army rotary-wing fleet with critical communication capabilities, performing as an internet controller and gateway to the Tactical Internet and Fire Support internet. The IDM facilitates connectivity to multiple radios used by rotary-wing aircraft and the Blue Force Tracker transceiver, as well as providing the means for rapid data transfer. This hardware/software solution also provides a flexible, software-driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Joint Variable Message Format messages capability to the cockpit and is critical to the flight operations of the AH-64D/E, CH-47F and UH/HH-60M/V fleets. The IDM hardware production is critical to the overall readiness of supported Army Aviation Platforms. The Multi-Core Processor-501 modification will be a technology replacement for the current Army IDM-401 and become a core component to support a Digital Backbone for Army rotary wing aircraft.

The ADEC is an Army aviation program providing capabilities needed at the aviation unit level to implement and support improvements within aviation operations, safety, and training to increase operational effectiveness and situational awareness at all command echelons. ADEC provides a common and interoperable capability required to implement the DoD mandated Military Flight Operations Quality Assurance

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft		P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan

ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604201A
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Line Item MDAP/MAIS Code: N/A

processes. ADEC will standardize flight scheduling/management, risk management, mission approval, and flight data analysis and visualization. ADEC provides interfaces to CAFRS to reduce data entry and information technology footprint while enabling disconnected and split based operations. ADEC hardware architecture will provide a server infrastructure for residency of multiple critical army aviation programs such as Global Combat Support System - Army (GCSS-A), ACN and CAFRS. Army Aviation platforms are dependent upon ADEC as a host to enable a centralized architecture to support aviation critical mission operations.

The ACN is an Army Aviation program required for the completion of aviation maintenance activities and the documentation required to maintain airworthiness for all Army aircraft. ACN implements The Army Maintenance Management System - Aviation policy and procedures and integrates with CAFRS, GCSS-A, Maintenance Consolidated Database System, and Enterprise Materiel Status Reporting to reduce manual entries and increase data accuracy. ACN reduces the information technology footprint within an aviation unit by integrating multiple software applications such as the interactive electronic technical manuals, platform software applications and condition based maintenance plus tools onto a multi-purpose hardware platform. ACN provides its data to the Consolidated Aviation Maintenance Management system to provide a fleet and higher echelon view of material status and manage non-standard supply actions. The ACN is being fielded to all Army Aviation units, Rotary-wing, Fixed-wing and Unmanned Aircraft System equipped units. ACN will completely replace the Unit Level Logistics System - Aviation (Enhanced) and Unmanned Aircraft Systems - Initiative systems currently in use by the end of FY19.

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	73.830	68.796	53.528	0.010	53.538	37.298	13.654	11.225	25.235
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	52.994	45.703	46.970	-	46.970	36.543	26.205	35.732	16.534
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.578	4.115	4.944	-	4.944	3.846	2.758	3.761	1.741
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft

P-1 Line Item Number / Title:
8658AA0712 / Network And Mission Plan

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604201A

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-3a	AA0712 / Network and Mission Plan (Rationalization, Standardization, Interoperability, Compatibility, Simplification)				- / 596.957	- / 132.402	- / 118.614	- / 105.442	- / 0.010	- / 105.452
P-40	Total Gross/Weapon System Cost				- / 596.957	- / 132.402	- / 118.614	- / 105.442	- / 0.010	- / 105.452
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA0712 / Network and Mission Plan (Rationalization, Standardization, Interoperability, Compatibility, Simplification)				- / 77.687	- / 42.617	- / 50.718	- / 43.510	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 77.687	- / 42.617	- / 50.718	- / 43.510	Continuing	Continuing

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

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

Justification:
 FY 2020 Base procurement dollars in the amount of \$15.903 million supports AMPS software revisions necessary for aviation fleet modernization programs in support of Army Aviation's 27 aircraft variants. Maintains interoperability and commonality with Army Mission Command initiatives.

FY 2020 Base procurement dollars in the amount of \$82.024 million supports the procurement of IDM-401 kits to upgrade the fleet from the IDM-304 and IDM-304B variants and to provide a technology refresh to the IDM hardware. The funding will also address modifications to the IDM application software and the host computing environment to support an open systems approach to integration of application software which will drive down software costs. The funding will maintain compliance with cybersecurity, and changes to the functionality of the IDM application in support of Army Networking initiatives for new radios and mission command modernization. These kits support production line and modification work order installations for the AH-64D/E, CH-47F and HH/UH-60M/V helicopters.

FY 2020 Base procurement dollars in the amount of \$7.525 million supports the procurement of software and software licenses and completes the fielding and training of ACN systems for Army Aviation fixed-wing units, upgrading of ACN software, and staffing of a 24 hour Help Desk.

FY2020 OCO procurement dollars in the amount of \$0.010 million supports unit fielding and training in Europe in order to provide Aviation Mission Planning System.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan	Modification Number / Title: AA0712 / Network and Mission Plan

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	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

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The AMPS provides automated mission planning, risk assessment and transfer of mission data to Army Aviation platforms in support of Mission Command functions within Aviation units. The AMPS system supports pre-mission planning and rehearsal, including route planning, communications planning, and aircraft configuration. AMPS has the ability to generate mission data in either hard copy or electronic formats. The electronic formats are loaded onto the aircraft platforms utilizing a Data Transfer Device initializing the communication, navigation, and weapons systems on the aircraft. Supported aircraft include the AH-64D/E, CH-47F, UH-60L/M/Q, and HH-60M, and Handheld applications. Support for the Enhanced Medium Altitude Reconnaissance Surveillance System (EMARSS), UH-60V, AH-64E V6, and Unmanned Aircraft Systems (UAS) in the U.S. baseline will be provided in a future release. The AMPS supports Fixed Wing aircraft with Take Off Landing Distance calculators, AH-64 aircraft with a mobile Maintenance Test Flight Calculator and Army Rotary Wing aircraft with Integrated Performance Aircraft Configuration Tool/Flight Performance Models for performance and Weight and Balance planning. The AMPS program includes management of the Commander's Aviation Risk Tool and the Centralized Aviation Flight Records System (CAFRS). The AMPS hardware is replaced after five years of use to accommodate rapid commercial technology changes. The AMPS program manages and supports FliteScene Software licenses, maintenance agreements, and related engineering services. FliteScene is a digital map technology application that provides enhanced navigation capabilities to the military flight crew. FliteScene Digital Map is a high performance, combat proven, digital map software product. FliteScene Digital Map software forward-looking capabilities enhance mission effectiveness and include presentation of weather, contour lines, slope shading, dynamic elevation banding, threat depiction, variable scaling, and symbology overlays.

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The ADEC is an Army aviation program providing capabilities needed at the aviation unit level to implement and support improvements within aviation operations, safety, and training to increase operational effectiveness and situational awareness at all command echelons. ADEC provides a common and interoperable capability required to implement the DoD mandated Military Flight Operations Quality Assurance processes. ADEC will standardize flight scheduling/management, risk management, mission approval, and flight data analysis and visualization. ADEC provides interfaces to CAFRS to reduce data entry and information technology footprint while enabling disconnected and split based operations. ADEC hardware architecture will provide a server infrastructure for residency of multiple critical army aviation programs

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan	Modification Number / Title: AA0712 / Network and Mission Plan

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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such as Global Combat Support System - Army (GCSS-A), ACN and CAFRS. Army Aviation platforms are dependent upon ADEC as a host to enable a centralized architecture to support aviation critical mission operations.

The ACN is an Army Aviation program required for the completion of aviation maintenance activities and the documentation required to maintain airworthiness for all Army aircraft. ACN implements The Army Maintenance Management System - Aviation policy and procedures and integrates with CAFRS, GCSS-A, Maintenance Consolidated Database System, and Enterprise Materiel Status Reporting to reduce manual entries and increase data accuracy. ACN reduces the information technology footprint within an aviation unit by integrating multiple software applications such as the interactive electronic technical manuals, platform software applications, and condition based maintenance plus tools onto a multi-purpose hardware platform. ACN provides its data to the Consolidated Aviation Maintenance Management system to provide a fleet and higher echelon view of material status and manage non-standard supply actions. The ACN is being fielded to all Army Aviation units, Rotary-wing, Fixed-wing and Unmanned Aircraft System equipped units. ACN will completely replace the Unit Level Logistics System - Aviation (Enhanced) and Unmanned Aircraft Systems - Initiative systems currently in use by the end of FY19.

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

FY 2020 Base procurement dollars in the amount of \$15.903 million supports AMPS software revisions necessary for aviation fleet modernization programs in support of Army Aviation's 27 aircraft variants. Maintains interoperability and commonality with Army Mission Command initiatives.

FY 2020 Base procurement dollars in the amount of \$82.024 million supports the procurement of IDM-401 kits to upgrade the fleet from the IDM-304 and IDM-304B variants and to provide a technology refresh to the IDM hardware. The funding will also address modifications to the IDM application software and the host computing environment to support an open systems approach to integration of application software which will drive down software costs. The funding will maintain compliance with cybersecurity, and changes to the functionality of the IDM application in support of Army Networking initiatives for new radios and mission command modernization. These kits support production line and modification work order installations for the AH-64D/E, CH-47F and HH/UH-60M/V helicopters.

FY 2020 Base procurement dollars in the amount of \$7.525 million supports the procurement of software and software licenses and complete the fielding and training of ACN systems for Army Aviation fixed-wing units, upgrading of ACN software, and staffing of a 24 hour Help Desk.

FY2020 OCO procurement dollars in the amount of \$0.010 million supports unit fielding and training in Europe in order to provide Aviation Mission Planning System.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	73.830	68.796	53.528	0.010	53.538	37.298	13.654	11.225	25.235
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	52.994	45.703	46.970	-	46.970	36.543	26.205	35.732	16.534
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.578	4.115	4.944	-	4.944	3.846	2.758	3.761	1.741
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan							Modification Number / Title: AA0712 / Network and Mission Plan			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:							
Models of Systems Affected: AH-64D/E, CH-47D/F, UH-60A/L/M/Q/V, HH-60L/M, EMARSS, UH-72,UAS				Modification Type: Rationalization, Standardization, Interoperability, Compatibility, Simplification				Related RDT&E PEs:						
Financial Plan	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		
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		
Procurement														
Modification Item 1 of 4: Aviation Mission Planning System (AMPS)														
B Kits														
Recurring														
Kit Quantity- (Computer)	5,352 / 16.816	1,866 / 12.036	562 / 4.395	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
ECPs	- / 112.358	- / 20.957	- / 26.150	- / 4.332	- / -	- / 4.332	- / 4.375	- / 4.145	- / 9.406	- / 2.478	- / -	Continuing	Continuing	
Systems Engineering	- / 7.828	- / 4.909	- / 3.683	- / 3.757	- / -	- / 3.757	- / 3.832	- / 3.909	- / 3.987	- / 4.066	- / -	Continuing	Continuing	
System Test and Eval	- / 9.257	- / 1.647	- / 0.676	- / 1.021	- / -	- / 1.021	- / 1.522	- / 0.908	- / 0.908	- / 1.436	- / -	Continuing	Continuing	
Fielding/Training	- / 41.990	- / 9.986	- / 6.192	- / 5.193	- / 0.010	- / 5.203	- / 4.747	- / 4.842	- / 4.494	- / 5.174	- / -	Continuing	Continuing	
Other- PM Admin	- / 10.756	- / 3.819	- / 2.845	- / 1.590	- / -	- / 1.590	- / 1.701	- / 1.922	- / 2.065	- / 2.106	- / -	Continuing	Continuing	
Subtotal: Recurring	5,352 / 199.005	1,866 / 53.354	562 / 43.941	- / 15.893	- / 0.010	- / 15.903	- / 16.177	- / 15.726	- / 20.860	- / 15.260	- / -	Continuing	Continuing	
Subtotal: Aviation Mission Planning System (AMPS)	5,352 / 199.005	1,866 / 53.354	562 / 43.941	- / 15.893	- / 0.010	- / 15.903	- / 16.177	- / 15.726	- / 20.860	- / 15.260	- / -	Continuing	Continuing	
Modification Item 2 of 4: Improved Data Modem (IDM)														
B Kits														
Recurring														
Kit Quantity- IDM	- / 9.776	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 9.776	
Kit Quantity- IDM OSA	3,971 / 47.615	524 / 23.308	378 / 26.901	541 / 35.165	- / -	541 / 35.165	205 / 16.577	60 / 5.135	60 / 5.237	- / -	- / -	Continuing	Continuing	
Aircraft Integration	- / 151.588	- / -	- / 15.117	- / 13.516	- / -	- / 13.516	- / 14.741	- / 1.298	- / 5.516	- / 8.704	- / -	Continuing	Continuing	
ECP (SW)	- / 69.106	- / 15.338	- / 16.767	- / 12.430	- / -	- / 12.430	- / 15.594	- / 6.680	- / 10.856	- / 10.841	- / -	Continuing	Continuing	
Systems Engineering	- / 10.406	- / 2.575	- / 4.587	- / 3.994	- / -	- / 3.994	- / 2.102	- / 2.144	- / 1.094	- / 1.110	- / -	Continuing	Continuing	
System Test & Eval	- / 44.894	- / 8.730	- / 9.167	- / 12.595	- / -	- / 12.595	- / 8.189	- / 7.313	- / 2.924	- / 2.937	- / -	Continuing	Continuing	
Fielding/Training	- / 1.144	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.144	
Other- PM Admin	- / 18.050	- / 4.723	- / 2.096	- / 4.324	- / -	- / 4.324	- / 4.307	- / 4.321	- / 4.231	- / 4.658	- / -	Continuing	Continuing	
Subtotal: Recurring	3,971 / 352.579	524 / 54.674	378 / 64.635	541 / 82.024	- / -	541 / 82.024	205 / 61.510	60 / 26.891	60 / 29.858	- / 28.250	- / -	Continuing	Continuing	
Subtotal: Improved Data Modem (IDM)	3,971 / 352.579	524 / 54.674	378 / 64.635	541 / 82.024	- / -	541 / 82.024	205 / 61.510	60 / 26.891	60 / 29.858	- / 28.250	- / -	Continuing	Continuing	
Modification Item 3 of 4: Aviation Data Exploitation Capability (ADEC)														
B Kits														
Recurring														
Kit Quantity- Workstation	452 / 1.035	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	452 / 1.035	
Kit Quantity- Server	50 / 0.763	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	50 / 0.763	

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan						Modification Number / Title: AA0712 / Network and Mission Plan			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AH-64D/E, CH-47D/F, UH-60A/L/M/Q/V, HH-60L/M, EMARSS, UH-72,UAS				Modification Type: Rationalization, Standardization, Interoperability, Compatibility, Simplification				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
ECP (SW)	- / 1.186	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.186	
Data	- / 0.486	- / 0.357	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.843	
Systems Engineering	- / 4.362	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.362	
System Test & Eval	- / 0.304	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.304	
Fielding/Training	- / 4.276	- / 0.696	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.972	
Other- PM Admin	- / 4.022	- / 3.148	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 7.170	
Subtotal: Recurring	502 / 16.434	- / 4.201	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	502 / 20.635	
Subtotal: Aviation Data Exploitation Capability (ADEC)	502 / 16.434	- / 4.201	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	502 / 20.635	
Modification Item 4 of 4: Aircraft Notebook (ACN)													
B Kits													
Recurring													
ECP (SW)	- / 5.500	- / 0.955	- / 2.411	- / 2.222	- / -	- / 2.222	- / -	- / -	- / -	- / -	- / 0.000	- / 11.088	
Data	- / 0.285	- / 0.314	- / -	- / 0.182	- / -	- / 0.182	- / -	- / -	- / -	- / -	- / 0.000	- / 0.781	
Systems Engineering	- / 2.846	- / 1.436	- / 3.159	- / 3.369	- / -	- / 3.369	- / -	- / -	- / -	- / -	- / 0.000	- / 10.810	
System Test	- / 0.488	- / 0.248	- / 0.406	- / 0.514	- / -	- / 0.514	- / -	- / -	- / -	- / -	- / 0.000	- / 1.656	
Fielding/Training	- / 17.643	- / 16.785	- / 3.135	- / 0.200	- / -	- / 0.200	- / -	- / -	- / -	- / -	- / 0.000	- / 37.763	
Other- PM Admin	- / 2.177	- / 0.435	- / 0.927	- / 1.038	- / -	- / 1.038	- / -	- / -	- / -	- / -	- / 0.000	- / 4.577	
Subtotal: Recurring	- / 28.939	- / 20.173	- / 10.038	- / 7.525	- / -	- / 7.525	- / -	- / -	- / -	- / -	- / -	- / 66.675	
Subtotal: Aircraft Notebook (ACN)	- / 28.939	- / 20.173	- / 10.038	- / 7.525	- / -	- / 7.525	- / -	- / -	- / -	- / -	- / -	- / 66.675	
Subtotal: Procurement, All Modification Items	9,825 / 596.957	2,390 / 132.402	940 / 118.614	541 / 105.442	- / 0.010	541 / 105.452	205 / 77.687	60 / 42.617	60 / 50.718	- / 43.510	Continuing	Continuing	
Installation													
Modification Item 3 of 4: Aviation Data Exploitation Capability (ADEC)	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Modification Item 4 of 4: Aircraft Notebook (ACN)	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
Subtotal: Installation	2 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	
Total													
Total Cost (Procurement + Support + Installation)	596.957	132.402	118.614	105.442	0.010	105.452	77.687	42.617	50.718	43.510	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan	Modification Number / Title: AA0712 / Network and Mission Plan
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 4: Aviation Mission Planning System (AMPS)

Manufacturer Information

Manufacturer Name: Getac	Manufacturer Location: Irvine, CA
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Not applicable

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	In	Out	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

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Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan	Modification Number / Title: AA0712 / Network and Mission Plan
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 4: Improved Data Modem (IDM)

Manufacturer Information

Manufacturer Name: AMRDEC Software Engineering Directorate	Manufacturer Location: Redstone Arsenal, AL
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Not Applicable

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	In	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan	Modification Number / Title: AA0712 / Network and Mission Plan

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 4: Aviation Data Exploitation Capability (ADEC)

Manufacturer Information

Manufacturer Name: AMRDEC Software Engineering Directorate	Manufacturer Location: Redstone Arsenal, AL
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Not Applicable

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8658AA0712 / Network And Mission Plan	Modification Number / Title: AA0712 / Network and Mission Plan

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 4: Aircraft Notebook (ACN)

Manufacturer Information

Manufacturer Name: AMRDEC Software Engineering Directorate Manufacturer Location: Redstone Arsenal, AL

Administrative Leadtime (in Months): Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Not Applicable

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604201A
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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>)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The current Navigation Systems provide Army Aviation with extremely accurate and secure navigation and timing, assists in situational awareness, and aids in prevention of fratricide. The Global Positioning System (GPS) is installed in two configurations based upon mission profile, operational requirements, and avionics architecture of the aircraft. The Doppler GPS Navigation Set (DGNS) is used for the Non-bussed Utility and Cargo helicopters. The Embedded GPS Inertial Navigation System (EGI) is integrated into the Modernized Cargo, Utility, Attack, and Special Operations fleets of helicopters. The upgraded DGNS Computer Display Unit (CDU) and GPS Anti-jam Antenna is being installed on the Blackhawk (UH-60A/L and HH-60A/L). The P3I EGI A-Kits and B-Kits are being installed on UH/HH-60M, CH-47F, Apache (AH-64E), and Special Operations Aircraft (SOA) and bring a number of enhancements required for operations in civil airspace as well as improved levels of Assured - Position, Navigation and Timing through Military Code (M-Code) GPS signals and GPS Anti-jam Antennas. The modification program to the DGNS Computer Display Unit (CDU), A-Kit, and software upgrades are being conducted to reduce pilot workload and fatigue through a user friendly interface, provide maps and charts to augment tactical and Instrument Flight Rules navigational operations, and bring GPS Anti-Jam capabilities which significantly improve levels of Assured - Position, Navigation, and Timing (A-PNT) through GPS jammer nulling technology.

The Aviation Tactical Communication Systems (ATCS) programs are Army Aviation Programs to procure, integrate, and field A and B Kits to meet Army Aviation Communications requirements. The ATCS B-Kits include the ARC-201D and the ARC-231 radio sets along with associated power amplifiers and mounts. A-Kit hardware is procured from a number of industry partners dependent upon aircraft model and Flight Management System software modifications are planned to be procured through the prime contractor for each platform. The ATCS program is currently split between two separate programs, the first is Alt Comms, which includes the ARC-231 utilizing the RT-1808A radio, and the second, Multi-mode Aviation Radio Set (MARS), which consists of the ARC-231 upgrade program bringing modernized waveforms and cryptography through the RT-1987 radio.

The Aviation Maritime Fixed- Aviation (AMF-A) Radio Integration Program installs and qualifies the Army's Future Airborne Networking Radio hardware and software for production line and fielded Army Aviation Aircraft Rotary Wing Aircraft, SOA, and Unmanned Aircraft Systems (UAS) platforms to enable the operation of PEO C3T software defined networking radios with SINCGARS and other future advanced networking waveforms. This program also provides for the procurement and installation of AMF Radio retrofit A-Kits for use on platforms that were fielded without these capabilities. AMF Radios and ancillaries are procured by PM Tactical Radios and are not part of the AMF Radio Integration effort.

The Blue Force Tracking - Aviation (BFT-A) Program integrates, qualifies, and manages the installation of BFT-2 system installation kits (A-Kit) for Army Rotary Wing Aircraft. The A-Kit utilizes the BFT-2 transceiver and KGV-72 boxes provided by PM Mission Command (MC).

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604201A
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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
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	91.382	86.333	107.158	-	107.158	69.409	48.788	74.653	58.042
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	63.340	62.788	45.725	-	45.725	55.525	36.640	59.723	46.434
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	7.917	7.848	11.432	-	11.432	13.883	9.160	14.930	11.608
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft

P-1 Line Item Number / Title:
8659AA0723 / Comms, Nav Surveillance

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604201A

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-3a	AA0723 / Communications, Navigation, and Surveillance (New or Improved Operational Capability)				- / 559.151	- / 162.639	- / 156.969	- / 164.315	- / -	- / 164.315
P-40	Total Gross/Weapon System Cost				- / 559.151	- / 162.639	- / 156.969	- / 164.315	- / -	- / 164.315

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA0723 / Communications, Navigation, and Surveillance (New or Improved Operational Capability)				- / 138.817	- / 94.588	- / 149.306	- / 116.084	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 138.817	- / 94.588	- / 149.306	- / 116.084	Continuing	Continuing

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

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

Justification:
 FY 2020 Base Procurement dollars in the amount of \$25.649 million supports the procurement and installation of upgraded DGNS CDUs for the UH/HH-60L aircraft.
 FY 2020 Base Procurement dollars in the amount of \$10.213 million supports the procurement and integration of GPS anti-jam antenna capability for the UH/HH-60L aircraft which brings increased levels of A-PNT.
 FY 2020 Base Procurement dollars in the amount of \$3.332 million provides for systems engineering and test for the M-Code capable EGI into four modernized Army aircraft platforms enhancing the A-PNT capabilities on those aircraft.
 FY 2020 Base Procurement dollars in the amount of \$18.515 million provides for procurement of GPS anti-jam antenna A-Kits and platform integration for a GPS anti-jam antenna capability onto nine modernized Army aircraft platforms to bring greater levels of A-PNT to those platforms.
 FY 2020 Base Procurement dollars in the amount of \$0.778 million supports installation of ARC-231 systems on UH-60L aircraft.
 FY 2020 Base Procurement dollars in the amount of \$88.377 million supports ARC-231A production line requirements, fielding the ARC-231A to one CAB, and system test and evaluation of ARC-231A/MARS B Kits as well as the aircraft integration to support crypto-modernization.
 FY 2020 Base Procurement dollars in the amount of \$17.451 million provides for the procurement and installation BFT-2 A-Kits.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

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	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>)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The current Navigation Systems provide Army Aviation with extremely accurate and secure navigation and timing, assists in situational awareness, and aids in prevention of fratricide. The Global Positioning System (GPS) is installed in two configurations based upon mission profile, operational requirements, and avionics architecture of the aircraft. The Doppler GPS Navigation Set (DGNS) is used for the Non-bussed Utility and Cargo helicopters. The Embedded GPS Inertial Navigation System (EGI) is integrated into the Modernized Cargo, Utility, Attack, and Special Operations fleets of helicopters. The upgraded DGNS Computer Display Unit (CDU) and GPS Anti-jam Antenna is being installed on the Blackhawk (UH-60A/L and HH-60A/L). The P3I EGI A-Kits and B-Kits are being installed on UH/HH-60M, CH-47F, Apache (AH-64E), and Special Operations Aircraft (SOA) and bring a number of enhancements required for operations in civil airspace as well as improved levels of Assured - Position, Navigation and Timing through Military Code (M-Code) GPS signals and GPS Anti-jam Antennas. The modification program to the DGNS Computer Display Unit (CDU), A-Kit, and software upgrades are being conducted to reduce pilot workload and fatigue through a user friendly interface, provide maps and charts to augment tactical and Instrument Flight Rules navigational operations, and bring GPS Anti-Jam capabilities which significantly improve levels of Assured - Position, Navigation, and Timing (A-PNT) through GPS jammer nulling technology.

The Aviation Tactical Communication Systems (ATCS) programs are Army Aviation Programs to procure, integrate, and field A and B Kits to meet Army Aviation Communications requirements. The ATCS B-Kits include the ARC-201D and the ARC-231 radio sets along with associated power amplifiers and mounts. A-Kit hardware is procured from a number of industry partners dependent upon aircraft model and Flight Management System software modifications are planned to be procured through the prime contractor for each platform. The ATCS program is currently split between two separate programs, the first is Alt Comms, which includes the ARC-231 utilizing the RT-1808A radio, and the second, Multi-mode Aviation Radio Set (MARS), which consists of the ARC-231 upgrade program bringing modernized waveforms and cryptography through the RT-1987 radio.

The Aviation Maritime Fixed- Aviation (AMF-A) Radio Integration Program installs and qualifies the Army's Future Airborne Networking Radio hardware and software for production line and fielded Army Aviation Aircraft Rotary Wing Aircraft, SOA, and Unmanned Aircraft Systems (UAS) platforms to enable the operation of PEO C3T software defined networking radios with SINCGARS and other future advanced networking waveforms. This program also provides for the procurement and installation of AMF Radio retrofit A-Kits for use on platforms that were fielded without these capabilities. AMF Radios and ancillaries are procured by PM Tactical Radios and are not part of the AMF Radio Integration effort. Beginning in FY19, the AMF-A radio integration program has been terminated.

The Blue Force Tracking - Aviation (BFT-A) Program integrates, qualifies, and manages the installation of BFT-2 system installation kits (A-Kit) for Army Rotary Wing Aircraft. The A-Kit utilizes the BFT-2 transceiver and KGV-72 boxes provided by PM Mission Command (MC).

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

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

FY 2020 Base Procurement dollars in the amount of \$25.649 million supports the procurement and installation of upgraded DGNS CDUs for the UH/HH-60L aircraft.

FY 2020 Base Procurement dollars in the amount of \$10.213 million supports the procurement and integration of GPS anti-jam antenna capability for the UH/HH-60L aircraft which brings increased levels of A-PNT.

FY 2020 Base Procurement dollars in the amount of \$3.332 million provides for systems engineering and test for the M-Code capable EGI into four modernized Army aircraft platforms enhancing the A-PNT capabilities on those aircraft.

FY 2020 Base Procurement dollars in the amount of \$18.515 million provides for procurement of GPS anti-jam antenna A-Kits and platform integration for a GPS anti-jam antenna capability onto nine modernized Army aircraft platforms to bring greater levels of A-PNT to those platforms.

FY 2020 Base Procurement dollars in the amount of \$0.778 million supports installation of ARC-231 systems on UH-60L aircraft.

FY 2020 Base Procurement dollars in the amount of \$88.377 million supports ARC-231A production line requirements, fielding the ARC-231A to one CAB, and system test and evaluation of ARC-231A/MARS B Kits as well as the aircraft integration to support crypto-modernization.

FY 2020 Base Procurement dollars in the amount of \$17.451 million provides for the procurement and installation BFT-2 A-Kits.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	91.382	86.333	107.158	-	107.158	69.409	48.788	74.653	58.042
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	63.340	62.788	45.725	-	45.725	55.525	36.640	59.723	46.434
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	7.917	7.848	11.432	-	11.432	13.883	9.160	14.930	11.608
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
Models of Systems Affected: UH/HH-60A/L, UH/HH/MH-60M, CH-47D, CH/MH-47F, AH-64D/E, LUH, UAS	Modification Type: New or Improved Operational Capability
Related RDT&E PEs:	

Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)

Procurement												
Modification Item 1 of 9: DGNS (AN/ASN-128D) P3I												
A Kits												
Recurring												
Engineering Change Orders	- / 2.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.800
Data	- / 1.712	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.712
Training Equipment	46 / 6.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	46 / 6.800
Systems Engineering	- / 8.930	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.930
Other - PM Admin	- / 1.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.500
Subtotal: Recurring	46 / 21.742	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 21.742
Subtotal: DGNS (AN/ASN-128D) P3I	46 / 21.742	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	46 / 21.742
Modification Item 2 of 9: DGNS (AN/ASN-128D) CDU/ SW Upgrade ECP B-Kit												
B Kits												
Recurring												
Upgraded CDU	125 / 9.062	125 / 9.062	50 / 6.135	300 / 20.590	- / -	300 / 20.590	20 / 2.400	- / -	- / -	- / -	- / 0.000	620 / 47.249
Fielding	- / 1.886	- / 3.545	- / 6.517	- / 1.527	- / -	- / 1.527	- / 1.359	- / 0.685	- / 1.300	- / -	- / 0.000	- / 16.819
Systems Eng / Program Management	- / 14.422	- / 1.458	- / 0.949	- / 0.913	- / -	- / 0.913	- / 1.026	- / 1.299	- / 1.094	- / -	- / 0.000	- / 11.161
Subtotal: Recurring	125 / 15.370	125 / 14.065	50 / 13.601	300 / 23.030	- / -	300 / 23.030	20 / 4.785	- / 1.984	- / 2.394	- / -	- / -	620 / 75.229
Non-Recurring												
Data / Training	- / 2.438	- / 0.911	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.349
Aircraft Integration	- / 8.030	- / 5.455	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.485
Systems Test & Evaluation	- / 2.764	- / 1.699	- / 2.012	- / 0.519	- / -	- / 0.519	- / 0.526	- / -	- / -	- / -	- / 0.000	- / 7.520
Subtotal: Non-Recurring	- / 13.232	- / 8.065	- / 2.012	- / 0.519	- / -	- / 0.519	- / 0.526	- / -	- / -	- / -	- / -	- / 24.354
Subtotal: DGNS (AN/ASN-128D) CDU/SW Upgrade ECP B-Kit	125 / 28.602	125 / 22.130	50 / 15.613	300 / 23.549	- / -	300 / 23.549	20 / 5.311	- / 1.984	- / 2.394	- / -	- / -	620 / 99.583
Modification Item 3 of 9: DGNS (AN/ASN-128D) CDU/ SW Upgrade ECP A-Kit												
A Kits												
Recurring												
GPS Anti Jam Antenna	- / -	- / -	235 / 7.748	300 / 8.100	- / -	300 / 8.100	110 / 3.370	- / -	- / -	- / -	115 / 3.560	760 / 22.778

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance					Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UH/HH-60A/L, UH/HH/MH-60M, CH-47D, CH/MH-47F, AH-64D/E, LUH, UAS					Modification Type: New or Improved Operational Capability				Related RDT&E PEs:				
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Systems Engineering / Program Management	- / 0.796	- / 0.810	- / 0.824	- / 0.853	- / -	- / 0.853	- / 0.875	- / 0.948	- / -	- / -	Continuing	Continuing	
Systems Test & Evaluation	- / 0.758	- / 0.772	- / 2.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.930	
Subtotal: Recurring	- / 1.554	- / 1.582	235 / 10.972	300 / 8.953	- / -	300 / 8.953	110 / 4.245	- / 0.948	- / -	- / -	Continuing	Continuing	
Non-Recurring													
Integration & NRE	- / -	- / 0.501	- / 0.501	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.002	
Subtotal: Non-Recurring	- / -	- / 0.501	- / 0.501	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.002	
Subtotal: DGNS (AN/ASN-128D) CDU/SW Upgrade ECP A-Kit	- / 1.554	- / 2.083	235 / 11.473	300 / 8.953	- / -	300 / 8.953	110 / 4.245	- / 0.948	- / -	- / -	Continuing	Continuing	
Modification Item 4 of 9: Embedded GPS Inertial Nav System (EGI) P3I B-Kit													
B Kits													
Recurring													
EGI EAGLE-M Shipsets	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	144 / 23.616	123 / 20.541	2,891 / 455.075	3,158 / 499.232	
EGI EAGLE SOA Shipsets	51 / 8.493	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	51 / 8.493	
Fielding	- / 1.365	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.365	
Systems Engineering / Program Management	- / 13.648	- / 2.635	- / 3.192	- / 3.164	- / -	- / 3.164	- / 3.684	- / 4.310	- / 4.730	- / 4.431	Continuing	Continuing	
Subtotal: Recurring	51 / 23.506	- / 2.635	- / 3.192	- / 3.164	- / -	- / 3.164	- / 3.684	- / 4.310	144 / 28.346	123 / 24.972	Continuing	Continuing	
Non-Recurring													
Aircraft Integration	- / 2.672	- / 4.214	- / 8.846	- / -	- / -	- / -	- / 5.059	- / 6.504	- / 2.409	- / -	- / 0.000	- / 29.704	
Systems Test & Evaluation	- / 5.600	- / -	- / 3.031	- / 0.168	- / -	- / 0.168	- / 0.171	- / 0.737	- / 3.458	- / 0.897	Continuing	Continuing	
Training / Data / Support Equipment	- / 1.493	- / 2.060	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.553	
Subtotal: Non-Recurring	- / 9.765	- / 6.274	- / 11.877	- / 0.168	- / -	- / 0.168	- / 5.230	- / 7.241	- / 5.867	- / 0.897	Continuing	Continuing	
Subtotal: Embedded GPS Inertial Nav System (EGI) P3I B-Kit	51 / 33.271	- / 8.909	- / 15.069	- / 3.332	- / -	- / 3.332	- / 8.914	- / 11.551	144 / 34.213	123 / 25.869	Continuing	Continuing	
Modification Item 5 of 9: Embedded GPS Inertial Nav System (EGI) P3I A-Kit													
A Kits													
Recurring													
GPS Anti Jam Antenna	- / -	100 / 4.248	53 / 1.821	331 / 8.937	- / -	331 / 8.937	318 / 9.001	264 / 7.563	625 / 18.658	601 / 18.617	2,054 / 64.904	4,346 / 133.749	
Systems Engineering / Program Management	- / -	- / 0.865	- / 0.887	- / 0.915	- / -	- / 0.915	- / 0.923	- / 0.942	- / 0.968	- / 1.064	Continuing	Continuing	
Subtotal: Recurring	- / -	100 / 5.113	53 / 2.708	331 / 9.852	- / -	331 / 9.852	318 / 9.924	264 / 8.505	625 / 19.626	601 / 19.681	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Models of Systems Affected: UH/HH-60A/L, UH/HH/MH-60M, CH-47D, CH/MH-47F, AH-64D/E, LUH, UAS	Modification Type: New or Improved Operational Capability	Related RDT&E PEs:
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Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Non-Recurring												
Aircraft Integration	- / -	- / 3.658	- / 23.058	- / 5.093	- / -	- / 5.093	- / 2.101	- / 1.405	- / 1.055	- / -	- / 0.000	- / 36.370
Systems Test & Evaluation	- / -	- / 0.244	- / 14.012	- / 3.199	- / -	- / 3.199	- / 0.816	- / -	- / -	- / -	- / 0.000	- / 18.271
Subtotal: Non-Recurring	- / -	- / 3.902	- / 27.070	- / 8.292	- / -	- / 8.292	- / 2.917	- / 1.405	- / 1.055	- / -	- / -	- / 44.641
<i>Subtotal: Embedded GPS Inertial Nav System (EGI) P31 A-Kit</i>	- / -	100 / 9.015	53 / 29.778	331 / 18.144	- / -	331 / 18.144	318 / 12.841	264 / 9.910	625 / 20.681	601 / 19.681	Continuing	Continuing
Modification Item 6 of 9: Aviation Tactical Comm Systems (ATCS) - Alt Comms												
A Kits												
Recurring												
Kit Quantity-A-Kit	403 / 12.590	- / -	12 / 0.366	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	415 / 12.956
Systems Engineering / Program Management	- / 34.998	- / 11.475	- / 7.828	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 54.301
System Test & Evaluation	- / 10.107	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.107
Training / Data / Support Equipment	- / 0.230	- / 1.136	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.366
Fielding	- / 13.268	- / 3.092	- / 0.562	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 16.922
Subtotal: Recurring	403 / 71.193	- / 15.703	12 / 8.756	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	415 / 95.652
Non-Recurring												
Aircraft Integration	- / 97.371	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 97.371
Subtotal: Non-Recurring	- / 97.371	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 97.371
B Kits												
Recurring												
Kit Quantity-B-Kit (ARC-231) Shipsets	880 / 126.970	155 / 32.453	195 / 41.819	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	1,230 / 201.242
Kit Quantity-B-Kit (ARC201D) Shipsets	655 / 34.456	122 / 15.509	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	777 / 49.965
Subtotal: Recurring	1,535 / 161.426	277 / 47.962	195 / 41.819	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,007 / 251.207
<i>Subtotal: Aviation Tactical Comm Systems (ATCS) - Alt Comms</i>	1,938 / 329.990	277 / 63.665	207 / 50.575	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	2,422 / 444.230
Modification Item 7 of 9: Aviation Tactical Comm Systems (ATCS) - MARS												
A Kits												
Recurring												
Kit Quantity A-Kit	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,470 / 86.450	2,470 / 86.450

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
Models of Systems Affected: UH/HH-60A/L, UH/HH/MH-60M, CH-47D, CH/MH-47F, AH-64D/E, LUH, UAS	Modification Type: New or Improved Operational Capability
Related RDT&E PEs:	

Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Systems Engineering / Program Management	- / -	- / 5.595	- / 3.667	- / 11.142	- / -	- / 11.142	- / 12.113	- / 12.006	- / 13.294	- / 13.133	Continuing	Continuing
System Test & Evaluation	- / 2.339	- / 1.587	- / 1.613	- / 2.687	- / -	- / 2.687	- / 4.281	- / 2.178	- / 5.209	- / 1.532	Continuing	Continuing
Subtotal: Recurring	- / 2.339	- / 7.182	- / 5.280	- / 13.829	- / -	- / 13.829	- / 16.394	- / 14.184	- / 18.503	- / 14.665	Continuing	Continuing
Non-Recurring												
SINCGARS NRE	- / -	- / -	- / 1.417	- / 2.327	- / -	- / 2.327	- / 1.356	- / 1.735	- / 1.953	- / 2.150	- / 0.000	- / 10.938
Aircraft Integration	- / -	- / -	- / 5.317	- / 8.729	- / -	- / 8.729	- / 25.390	- / 2.088	- / -	- / -	Continuing	Continuing
Subtotal: Non-Recurring	- / -	- / -	- / 6.734	- / 11.056	- / -	- / 11.056	- / 26.746	- / 3.823	- / 1.953	- / 2.150	Continuing	Continuing
B Kits												
Recurring												
Kit Shipset Qty B-Kit (ARC-231) - PIM	- / -	26 / 5.408	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	26 / 5.408
Kit Shipset Qty B-Kit (ARC 231) - GFE	- / -	- / -	- / -	169 / 37.338	- / -	169 / 37.338	176 / 39.490	147 / 33.663	250 / 58.680	159 / 40.385	1,367 / 288.437	2,268 / 497.993
Kit Shipset Qty B-Kit (ARC-231) for MWO	- / -	- / -	- / -	160 / 25.645	- / -	160 / 25.645	- / -	- / -	- / -	- / -	2,310 / 60.032	2,470 / 85.677
Fielding	- / -	- / -	- / -	- / 10.509	- / -	- / 10.509	- / 0.818	- / 0.769	- / 1.851	- / 0.991	Continuing	Continuing
Training/Data	- / -	- / 3.635	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.635
Subtotal: Recurring	- / -	26 / 9.043	- / -	329 / 63.492	- / -	329 / 63.492	176 / 40.308	147 / 34.432	250 / 60.531	159 / 41.376	Continuing	Continuing
Non-Recurring												
ECP - Non-Recurring	- / -	- / 15.711	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 15.711
Subtotal: Non-Recurring	- / -	- / 15.711	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 15.711
Subtotal: Aviation Tactical Comm Systems (ATCS) - MARS	- / 2.339	26 / 31.936	- / 12.014	329 / 88.377	- / -	329 / 88.377	176 / 83.448	147 / 52.439	250 / 80.987	159 / 58.191	Continuing	Continuing
Modification Item 8 of 9: Airborne Maritime Fixed (AMF-A) Radio Integration												
A Kits												
Recurring												
Kit Quantity - A-Kit - Production Line	148 / 13.466	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	148 / 13.466
Support Equipment	- / 2.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.030
System Test and Evaluation	- / 1.910	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.910
System Eng/Prog Mgmt (SEPM)	- / 17.825	- / 4.249	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 12.074
Subtotal: Recurring	148 / 25.231	- / 4.249	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	148 / 29.480
Non-Recurring												
NRE Aircraft Integration	- / 18.594	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 18.594

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance						Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UH/HH-60A/L, UH/HH/MH-60M, CH-47D, CH/MH-47F, AH-64D/E, LUH, UAS				Modification Type: New or Improved Operational Capability				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<i>Subtotal: Non-Recurring</i>	- / 18.594	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 18.594	
<i>Subtotal: Airborne Maritime Fixed (AMF-A) Radio Integration</i>	148 / 43.825	- / 4.249	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	148 / 48.074	
Modification Item 9 of 9: Blue Force Tracking-Aviation (BFT-A)													
A Kits													
Recurring													
BFT-A A-Kits (MWO)	1,314 / 16.258	278 / 4.494	310 / 3.844	228 / 3.671	- / -	228 / 3.671	100 / 1.719	77 / 0.593	100 / 1.030	35 / 0.281	- / 0.332	2,442 / 32.222	
BFT-A A Kit Spares	3 / 0.071	5 / 0.079	4 / 0.041	5 / 0.076	- / -	5 / 0.076	1 / 0.008	1 / 0.008	1 / 0.008	- / -	- / 0.000	20 / 0.291	
Test / Engineering	- / 7.211	- / 0.414	- / 0.510	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 18.135	
Fielding / Training	- / 4.170	- / 0.847	- / 0.945	- / 0.842	- / -	- / 0.842	- / 0.668	- / 0.360	- / 0.081	- / 0.005	Continuing	Continuing	
SEPM	- / 121.274	- / 15.416	- / 15.834	- / 15.349	- / -	- / 15.349	- / 16.735	- / 16.128	- / 15.903	- / 15.752	Continuing	Continuing	
Misc HW Procurement	- / 15.277	- / 0.306	- / 0.350	- / 0.131	- / -	- / 0.131	- / 0.188	- / 0.068	- / 0.071	- / 0.073	- / 0.000	- / 16.464	
<i>Subtotal: Recurring</i>	1,317 / 54.261	283 / 11.556	314 / 11.524	233 / 10.069	- / -	233 / 10.069	101 / 9.318	78 / 7.157	101 / 7.093	35 / 6.111	Continuing	Continuing	
Non-Recurring													
NRE-Test / Engineering	- / 5.749	- / 1.756	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 17.505	
<i>Subtotal: Non-Recurring</i>	- / 5.749	- / 1.756	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 17.505	
<i>Subtotal: Blue Force Tracking-Aviation (BFT-A)</i>	1,317 / 60.010	283 / 13.312	314 / 11.524	233 / 10.069	- / -	233 / 10.069	101 / 9.318	78 / 7.157	101 / 7.093	35 / 6.111	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	3,625 / 521.333	811 / 155.299	859 / 146.046	1,493 / 152.424	- / -	1,493 / 152.424	725 / 124.077	489 / 83.989	1,120 / 145.368	918 / 109.852	Continuing	Continuing	
Installation													
Modification Item 1 of 9: DGNS (AN/ASN-128D) P3I	46 / 0.296	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 0.296	
Modification Item 2 of 9: DGNS (AN/ASN-128D) CDU/ SW Upgrade ECP B-Kit	- / -	- / -	- / -	300 / 2.100	- / -	300 / 2.100	244 / 1.708	76 / 0.532	- / -	- / -	- / -	620 / 4.340	
Modification Item 3 of 9: DGNS (AN/ASN-128D) CDU/ SW Upgrade ECP A-Kit	- / -	- / -	- / -	235 / 1.260	- / -	235 / 1.260	300 / 1.512	110 / 0.563	- / -	- / -	115 / 0.580	760 / 3.915	
Modification Item 4 of 9: Embedded GPS Inertial Nav System (EGI) P3I B-Kit	51 / 0.447	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	144 / 0.288	3,014 / 5.926	
Modification Item 5 of 9: Embedded GPS Inertial Nav System (EGI) P3I A-Kit	- / -	- / -	50 / 0.180	103 / 0.371	- / -	103 / 0.371	331 / 2.317	318 / 1.848	264 / 1.848	625 / 4.375	2,655 / 4.207	4,346 / 15.146	
Modification Item 6 of 9: Aviation Tactical Comm Systems (ATCS) - Alt Comms	303 / 14.212	76 / 3.304	24 / 1.900	12 / 0.778	- / -	12 / 0.778	- / -	- / -	- / -	- / -	- / -	415 / 20.194	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Models of Systems Affected: UH/HH-60A/L, UH/HH/MH-60M, CH-47D, CH/MH-47F, AH-64D/E, LUH, UAS	Modification Type: New or Improved Operational Capability	Related RDT&E PEs:
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Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Modification Item 7 of 9: Aviation Tactical Comm Systems (ATCS) - MARS	- / -	- / -	- / -	- / -	- / -	- / -	160 / 1.050	- / -	- / -	- / -	2,310 / 74.100	2,470 / 75.150
Modification Item 9 of 9: Blue Force Tracking-Aviation (BFT-A)	803 / 22.863	143 / 4.036	401 / 8.843	267 / 7.382	- / -	267 / 7.382	282 / 8.153	315 / 7.656	87 / 2.090	64 / 1.569	80 / 2.000	2,442 / 64.592
<i>Subtotal: Installation</i>	<i>1,203 / 37.818</i>	<i>219 / 7.340</i>	<i>475 / 10.923</i>	<i>917 / 11.891</i>	<i>- / -</i>	<i>917 / 11.891</i>	<i>1,317 / 14.740</i>	<i>819 / 10.599</i>	<i>351 / 3.938</i>	<i>833 / 6.232</i>	<i>8,174 / 86.813</i>	<i>14,308 / 190.294</i>

Total												
Total Cost (Procurement + Support + Installation)	559.151	162.639	156.969	164.315	-	164.315	138.817	94.588	149.306	116.084	Continuing	Continuing

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UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 9: DGNS (AN/ASN-128D) P3I

Manufacturer Information

Manufacturer Name: BAE International Incorporated	Manufacturer Location: Wayne, NJ
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Prototype Assets

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	46 / 0.296	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 0.296
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	46 / 0.296	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 0.296

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 9: DGNS (AN/ASN-128D) CDU/SW Upgrade ECP B-Kit

Manufacturer Information

Manufacturer Name: BAE International Incorporated	Manufacturer Location: Wayne, NJ
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: Modification Work Order (MWO)

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	125 / 0.875	- / -	125 / 0.875	- / -	- / -	- / -	- / -	- / -	125 / 0.875
FY 2018	- / -	- / -	- / -	125 / 0.875	- / -	125 / 0.875	- / -	- / -	- / -	- / -	- / -	125 / 0.875
FY 2019	- / -	- / -	- / -	50 / 0.350	- / -	50 / 0.350	- / -	- / -	- / -	- / -	- / -	50 / 0.350
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	244 / 1.708	56 / 0.392	- / -	- / -	- / -	300 / 2.100
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	20 / 0.140	- / -	- / -	- / -	20 / 0.140
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	- / -	- / -	300 / 2.100	- / -	300 / 2.100	244 / 1.708	76 / 0.532	- / -	- / -	- / -	620 / 4.340

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	75	75	75	75	61	61	61	61	19	19	19	19	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	75	75	75	75	61	61	61	61	19	19	19	19	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 9: DGNS (AN/ASN-128D) CDU/SW Upgrade ECP A-Kit

Manufacturer Information

Manufacturer Name: Mayflower Communications, Inc.	Manufacturer Location: Boston, MA
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: MWO

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	- / -	- / -	235 / 1.260	- / -	235 / 1.260	- / -	- / -	- / -	- / -	- / -	235 / 1.260
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	300 / 1.512	- / -	- / -	- / -	- / -	300 / 1.512
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	110 / 0.563	- / -	- / -	- / -	110 / 0.563
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	115 / 0.580	115 / 0.580
Total	- / -	- / -	- / -	235 / 1.260	- / -	235 / 1.260	300 / 1.512	110 / 0.563	- / -	- / -	115 / 0.580	760 / 3.915

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	58	59	59	59	75	75	75	75	28	28	27	27	-	-	-	-	-	-	-	-	115	760
Out	-	-	-	-	-	-	-	-	-	-	58	59	59	59	75	75	75	75	28	28	27	27	-	-	-	-	-	-	-	115	760

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 9: Embedded GPS Inertial Nav System (EGI) P3I B-Kit

Manufacturer Information

Manufacturer Name: Honeywell, Incorporated	Manufacturer Location: Clearwater, FL
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: MWO

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	51 / 0.447	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	51 / 0.447
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	144 / 0.288	- / -	144 / 0.288
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	123 / 0.246	123 / 0.246
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,891 / 5.680	2,891 / 5.680
Total	51 / 0.447	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	144 / 0.288	3,014 / 5.926	3,209 / 6.661

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	36	36	36	3,014	3,209
Out	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	36	36	3,050	3,209

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 5 of 9: Embedded GPS Inertial Nav System (EGI) P3I A-Kit

Manufacturer Information

Manufacturer Name: Mayflower Communications, Inc.	Manufacturer Location: Boston, MA
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: MWO Installation

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	50 / 0.180	50 / 0.180	- / -	50 / 0.180	- / -	- / -	- / -	- / -	- / -	100 / 0.360
FY 2019	- / -	- / -	- / -	53 / 0.191	- / -	53 / 0.191	- / -	- / -	- / -	- / -	- / -	53 / 0.191
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	331 / 2.317	- / -	- / -	- / -	- / -	331 / 2.317
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	318 / 1.848	- / -	- / -	- / -	318 / 1.848
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	264 / 1.848	- / -	- / -	264 / 1.848
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	625 / 4.375	- / -	625 / 4.375
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	601 / 4.207	601 / 4.207
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,054 / 0.000	2,054 / 0.000
Total	- / -	- / -	50 / 0.180	103 / 0.371	- / -	103 / 0.371	331 / 2.317	318 / 1.848	264 / 1.848	625 / 4.375	2,655 / 4.207	4,346 / 15.146

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	12	12	13	13	26	26	26	25	83	83	83	82	79	79	80	80	66	66	66	66	156	156	156	157	2,655	4,346
Out	-	-	-	-	-	-	12	12	13	13	26	26	26	25	83	83	83	82	79	79	80	80	66	66	66	66	156	156	156	2,812	4,346

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 6 of 9: Aviation Tactical Comm Systems (ATCS) - Alt Comms

Manufacturer Information

Manufacturer Name: Various	Manufacturer Location: Various
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 10

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

Installation Information

Method of Implementation: Modification Work Order (MWO)

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	303 / 14.212	76 / 3.304	24 / 1.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	403 / 19.416
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	- / -	- / -	12 / 0.778	- / -	12 / 0.778	- / -	- / -	- / -	- / -	- / -	12 / 0.778
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	303 / 14.212	76 / 3.304	24 / 1.900	12 / 0.778	- / -	12 / 0.778	- / -	- / -	- / -	- / -	- / -	415 / 20.194

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	303	19	19	19	19	6	6	6	6	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	415
Out	284	19	19	19	19	19	6	6	6	6	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	415

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 7 of 9: Aviation Tactical Comm Systems (ATCS) - MARS

Manufacturer Information

Manufacturer Name: Raytheon	Manufacturer Location: Ft. Wayne IN
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: MWO

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	160 / 1.050	- / -	- / -	- / -	- / -	160 / 1.050
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,310 / 74.100	2,310 / 74.100
Total	- / -	- / -	- / -	- / -	- / -	- / -	160 / 1.050	- / -	- / -	- / -	2,310 / 74.100	2,470 / 75.150

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	2,310	2,470
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	2,310	2,470

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 8 of 9: Airborne Maritime Fixed (AMF-A) Radio Integration

Manufacturer Information

Manufacturer Name: TBD	Manufacturer Location: TBD
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Modification Work Order (MWO) - Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8659AA0723 / Comms, Nav Surveillance	Modification Number / Title: AA0723 / Communications, Navigation, and Surveillance

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 9 of 9: Blue Force Tracking-Aviation (BFT-A)

Manufacturer Information

Manufacturer Name: Various	Manufacturer Location: Various
Administrative Leadtime (in Months): 8	Production Leadtime (in Months): 10

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

Installation Information

Method of Implementation: Modification Work Order (MWO) - Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	803 / 22.863	143 / 4.036	368 / 8.115	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1,314 / 35.014
FY 2018	- / -	- / -	33 / 0.728	245 / 6.915	- / -	245 / 6.915	- / -	- / -	- / -	- / -	- / -	278 / 7.643
FY 2019	- / -	- / -	- / -	22 / 0.467	- / -	22 / 0.467	282 / 8.153	6 / 0.146	- / -	- / -	- / -	310 / 8.766
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	228 / 5.541	- / -	- / -	- / -	228 / 5.541
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	81 / 1.969	19 / 0.456	- / -	- / -	100 / 2.425
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	68 / 1.634	9 / 0.221	- / -	77 / 1.855
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	55 / 1.348	45 / 1.125	100 / 2.473
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	35 / 0.875	35 / 0.875
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	803 / 22.863	143 / 4.036	401 / 8.843	267 / 7.382	- / -	267 / 7.382	282 / 8.153	315 / 7.656	87 / 2.090	64 / 1.569	80 / 2.000	2,442 / 64.592

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	803	36	36	36	35	100	100	100	101	67	67	67	66	70	70	71	71	78	79	79	79	21	22	22	22	16	16	16	16	80	2,442
Out	787	16	36	36	36	35	100	100	100	101	67	67	67	66	70	70	71	71	79	79	79	79	21	22	22	22	16	16	16	95	2,442

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 8660A00713 / Degraded Visual Environment
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Degraded Visual Environment (DVE) system provides situational awareness to enable hazard avoidance through sensors to support various modes of flight during training and tactical operations. The Army's DVE Directed Requirement (DR) is to procure 40 DVE systems and 8 spares for the Army Medical Evacuation and Special Operations helicopters to improve crew situational awareness in brownout environments.

The DVE Army Acquisition Objective has not been established yet. The FY20 funding on this budget request is in support of the DR.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	30.000	0.000	49.450	49.450	49.450	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	30.000	-	49.450	49.450	49.450	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Army				Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft				P-1 Line Item Number / Title: 8660A00713 / Degraded Visual Environment	
ID Code (A=Service Ready, B=Not Service Ready):		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-3a	A00713 / Degraded Visual Environment (New or Improved Operational Capability)				- / -	- / -	- / 30.000	- / -	- / 49.450	- / 49.450
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / 30.000	- / -	- / 49.450	- / 49.450
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A00713 / Degraded Visual Environment (New or Improved Operational Capability)				- / 49.450	- / -	- / -	- / -	- / -	- / 128.900
P-40	Total Gross/Weapon System Cost				- / 49.450	- / -	- / -	- / -	- / -	- / 128.900

*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 2020 OCO procurement dollars in the amount of \$49.500 million supports the procurement of DVE systems necessary to train, field and employ the DVE system on Army and Special Operations helicopters. These kits also support production line and modification work order (MWO) installations for the HH-60M helicopters.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8660A00713 / Degraded Visual Environment	Modification Number / Title: A00713 / Degraded Visual Environment

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900

(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>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Degraded Visual Environment (DVE) system provides situational awareness to enable hazard avoidance through sensors to support various modes of flight during training and tactical operations. The Army's DVE Directed Requirement (DR) is to procure 40 DVE systems and 8 spares for the Army Medical Evacuation and Special Operations helicopters to improve crew situational awareness in brownout environments.

The DVE Army Acquisition Objective has not been established yet. The FY20 funding on this budget request is in support of the DR.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	30.000	0.000	49.450	49.450	49.450	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	30.000	-	49.450	49.450	49.450	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8660A00713 / Degraded Visual Environment						Modification Number / Title: A00713 / Degraded Visual Environment		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: HH-60M/MH-60M				Modification Type: New or Improved Operational Capability				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
<i>Modification Item 1 of 1: Degraded Visual Environment</i>												
A Kits												
Recurring												
A Kit	- / -	- / -	- / 3.798	- / 0.000	- / 0.811	- / 0.811	- / -	- / -	- / -	- / -	- / 0.000	- / 4.609
<i>Subtotal: Recurring</i>	- / -	- / -	- / 3.798	- / -	- / 0.811	- / 0.811	- / -	- / -	- / -	- / -	- / -	- / 4.609
B Kits												
Recurring												
B Kit	- / -	- / -	12 / 14.728	0 / 0.000	36 / 42.408	36 / 42.408	130 / 19.630	- / -	- / -	- / -	- / 0.000	178 / 76.766
Systems Engineering	- / -	- / -	- / 1.142	- / 0.000	- / 0.209	- / 0.209	- / 17.998	- / -	- / -	- / -	- / 0.000	- / 19.349
Fielding/Training/Support Equipment	- / -	- / -	- / 6.018	- / 0.000	- / 2.647	- / 2.647	- / 4.018	- / -	- / -	- / -	- / 0.000	- / 12.683
Other PM Admin	- / -	- / -	- / 3.904	- / 0.000	- / 2.651	- / 2.651	- / 2.784	- / -	- / -	- / -	- / 0.000	- / 19.339
Systems Test and Evaluation	- / -	- / -	- / 0.410	- / 0.000	- / 0.044	- / 0.044	- / 4.000	- / -	- / -	- / -	- / 0.000	- / 14.454
<i>Subtotal: Recurring</i>	- / -	- / -	12 / 26.202	- / -	36 / 47.959	36 / 47.959	130 / 48.430	- / -	- / -	- / -	- / -	178 / 122.591
<i>Subtotal: Degraded Visual Environment</i>	- / -	- / -	12 / 30.000	- / 0.000	36 / 48.770	36 / 48.770	130 / 48.430	- / -	- / -	- / -	- / -	178 / 127.200
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	12 / 30.000	- / -	36 / 48.770	36 / 48.770	130 / 48.430	- / -	- / -	- / -	- / -	178 / 127.200
Installation												
<i>Modification Item 1 of 1: Degraded Visual Environment</i>												
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	6 / 0.680	6 / 0.680	9 / 1.020	- / -	- / -	- / -	- / -	15 / 1.700
Total												
Total Cost (Procurement + Support + Installation)	-	-	30.000	-	49.450	49.450	49.450	-	-	-	-	128.900

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8660A00713 / Degraded Visual Environment	Modification Number / Title: A00713 / Degraded Visual Environment
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: Degraded Visual Environment

Manufacturer Information

Manufacturer Name: Sierra Nevada Corporation	Manufacturer Location: Sparks, NV
Administrative Leadtime (in Months): 14	Production Leadtime (in Months): 10

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

Installation Information

Method of Implementation: Modification Work Order (MWO)

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	- / -	- / -	0 / 0.000	6 / 0.680	6 / 0.680	- / -	- / -	- / -	- / -	- / -	6 / 0.680
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.020	- / -	- / -	- / -	- / -	9 / 1.020
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	- / -	- / -	- / -	6 / 0.680	6 / 0.680	9 / 1.020	- / -	- / -	- / -	- / -	15 / 1.700

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
In	-	-	-	-	-	-	-	-	-	-	-	-	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This budget line supports procurement of Global Air Traffic Management equipment for both Fixed Wing and Rotary Wing aircraft.

Global Air Traffic Management (GATM) is the military equivalent of the International Civil Aviation architecture known as Communications, Navigation and Surveillance and air traffic management programs. GATM is a Department of Defense term that describes the equipment, training, and procedures mandated by Civilian Air Traffic Control authorities in order to operate within 21st century airspace. Most ground based navigation aids will be phased out of service as the world transitions to a modernized air traffic management system. The modernization is designed to meet the current and future service demands posed by aviation growth. The advanced architecture will provide improved safety, accessibility, flexibility, predictability, reliability, capacity, efficiency, and security. Military aircraft will face significant flight restrictions if not GATM equipped.

GATM fixed wing requirements cannot be met with a single piece of avionics equipment. Meeting worldwide GATM fixed wing requirements will entail complete modifications that may include portions of military modifications and the upgrading of some existing avionics and displays and the procurement of new systems for the fixed wing fleet to include Engineer, Furnish and Install as a complete contractual effort. It also leverages Federal Aviation Administration (FAA) Supplemental Type Certificates (STC) that are already in existence and applies STCs to aircraft modifications. These modifications ensure continued worldwide deployment capability and safe operations.

Meeting worldwide GATM requirements for rotary wing and Unmanned Aircraft System (UAS) fleets will entail the upgrading of some existing avionics and the procurement of new systems. Included in the GATM program is the European mandated 8.33 kHz channel spacing requirement which is being met by the Alt Comms and Multi-Mode Aviation Radio Set programs, and the Mode S requirement which is being met by the Common Transponder Program (CXP) (formerly APX-118, APX-123/123A, and Automatic Dependent Surveillance-Broadcast (ADS-B) programs). The FAA ADS-B Out mandate is being met through a series of upgrades to CXP components, Embedded GPS Inertial (EGI) Navigation Systems, and aircraft Flight Management Systems. Also included in the GATM program is the requirement to provide a GPS Primary Means Instrument Flight Rules navigation in civil and military controlled airspace.

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army Quantity	-	-	-	-	-	-	-	-	-

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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
	Total Obligation Authority	20.572	14.660	17.031	-	17.031	16.504	10.925	9.721	8.249
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	14.961	10.834	12.386	-	12.386	12.003	7.946	7.070	5.999
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.870	1.354	1.549	-	1.549	1.501	0.993	0.884	0.750
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft

P-1 Line Item Number / Title:
8859AA0711 / GATM Rollup

ID Code (A=Service Ready, B=Not Service Ready): **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-3a	AA0704 / GATM Rotary Wing Aircraft (New or Improved Operational Capability)				- / 670.418	- / 37.403	- / 26.848	- / 30.966	- / -	- / 30.966
P-40	Total Gross/Weapon System Cost				- / 670.418	- / 37.403	- / 26.848	- / 30.966	- / -	- / 30.966

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	AA0704 / GATM Rotary Wing Aircraft (New or Improved Operational Capability)				- / 30.008	- / 19.864	- / 17.675	- / 14.998	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 30.008	- / 19.864	- / 17.675	- / 14.998	Continuing	Continuing

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

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

Justification:
 FY 2020 Base Procurement dollars in the amount of \$2.528 million supports the installation of APX-123/123A B Kits.
 FY 2020 Base Procurement dollars in the amount of \$18.605 million supports procurement and installation of EGI Navigational System B-Kits and associated aircraft integration costs to meet GATM requirements.
 FY 2020 Base Procurement dollars in the amount of \$9.082 million supports CXP B-Kit procurements of the APX-123A. The funding also provides for conversion kit procurements and the continued upgrades to the APX-118 to APX-123 and conversions to APX-123 to APX-123A.
 FY 2020 Base Procurement dollars in the amount of \$0.751 million supports installations of the APX-118 upgrade kits.
 In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft

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	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>)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Global Air Traffic Management (GATM) is the military equivalent of the International Civil Aviation architecture known as Communications, Navigation, Surveillance, and Air Traffic Management programs. GATM is a Department of Defense (DoD) term that describes the equipment, training, and procedures mandated by Civilian Air Traffic Control (ATC) authorities in order to operate within 21st century airspace. Most ground based navigation aids will be phased out of service as the world transitions to a modernized air traffic management system. The modernization is designed to meet the current and future service demands posed by aviation growth. The advanced architecture will provide improved safety, accessibility, flexibility, predictability, reliability, capacity, efficiency, and security. Military aircraft will face significant flight restrictions if not GATM equipped. GATM requirements are driven by civil aviation authorities and are not under DoD control. Meeting the worldwide GATM requirement will entail the upgrading of some existing avionics and the procurement of new systems for rotary wing and Unmanned Aircraft System (UAS) fleets. Included in the GATM program is the European mandated 8.33 kHz channel spacing requirement which is being met by the Alt Comms and Multi-Mode Aviation Radio Set programs, the Mode S requirement which is being met by the Common Transponder Program (formerly APX-118, APX-123/123A, and ADS-B programs), the ADS-B Out requirement which is being met through a series of upgrades to CXP components, Embedded GPS Inertial (EGI) Navigation Systems, and aircraft Flight Management Systems. Also included in the GATM program is the requirement to provide a GPS Primary Means Instrument Flight Rules navigation in civil and military controlled airspace. The GATM program also provides CXPs for the MC-12S Fixed Wing Aircraft.

GATM provides Army aircraft improved capabilities to allow them to continue to operate in civil controlled airspace without threat of exclusion. Identification Friend or Foe (IFF) Mode 5 provides enhanced security and greatly improved performance over Mode 4. It also improves compatibility with civil ATC by providing less interference. The Full Operational Capability for Mode 5 is 2020. Europe currently mandates Mode S and plans expansion of 8.33 kHz Very High Frequency - Amplitude Modulation (VHF-AM) in controlled airspace to ground level in high volume traffic areas. Army aircraft will not be allowed to transit through or operate in European airspace affected by these mandates unless the necessary Mode S, 8.33 kHz, and ADS-B Out upgrades are made. Army aircraft will also be excluded from flying in FAA controlled airspace without the ADS-B Out upgrades. Benefits of GATM include direct routing through civil airspace resulting in significant savings in both time and training costs. It allows for operations in worldwide civil controlled airspace and improves safety and operational efficiency while meeting the new worldwide frequency spectrum requirements.

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

FY 2020 Base Procurement dollars in the amount of \$2.528 million supports the installation of APX-123/123A B Kits.

FY 2020 Base Procurement dollars in the amount of \$18.605 million supports procurement and installation of EGI Navigational System B-Kits and associated aircraft integration costs to meet GATM requirements.

FY 2020 Base Procurement dollars in the amount of \$9.082 million supports CXP B-Kit procurements of the APX-123A. The funding also provides for conversion kit procurements and the continued upgrades to the APX-118 to APX-123 and conversions to APX-123 to APX-123A.

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Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

FY 2020 Base Procurement dollars in the amount of \$0.751 million supports installations of the APX-118 upgrade kits.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	20.572	14.660	17.031	-	17.031	16.504	10.925	9.721	8.249
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	14.961	10.834	12.386	-	12.386	12.003	7.946	7.070	5.999
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.870	1.354	1.549	-	1.549	1.501	0.993	0.884	0.750
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998

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Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup					Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:						
Models of Systems Affected: UH&HH60A/L, CH47D/F, UH60M, MH47G, MH60M, A/MH6, AH64A/D/E, UAS					Modification Type: New or Improved Operational Capability					Related RDT&E PEs:				
Financial Plan	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		
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		
Procurement														
Modification Item 1 of 6: Global Air Traffic Mgmt RW APX-123														
A Kits														
Recurring														
Kit Quantity - APX-123 A-Kits	680 / 2.531	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	680 / 2.531	
Aircraft Integ/RCUs/KIV77	- / 16.933	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 16.933	
ECP	- / 6.785	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.785	
Systems Eng/Prog Mgt (SEPM)	- / 21.245	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 21.245	
Other PM Admin	- / 8.437	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.437	
Subtotal: Recurring	680 / 55.931	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	680 / 55.931	
B Kits														
Recurring														
APX-123 B Kit Conversion Kit (MWO)	1,507 / 10.455	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	1,507 / 10.455	
APX-123A B-Kit Production Line	822 / 30.533	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	822 / 30.533	
APX-123 B-Kit Conversion Kit Prod Line	113 / 1.144	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	113 / 1.144	
APX-123 B-Kits Production Line	185 / 6.878	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	185 / 6.878	
APX-123 B-Kit (MWO)	60 / 2.231	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	60 / 2.231	
Fielding/Training	- / 21.002	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 21.002	
Subtotal: Recurring	2,687 / 72.243	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,687 / 72.243	
Non-Recurring														
B Kit	- / 23.696	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 23.696	
Subtotal: Non-Recurring	- / 23.696	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 23.696	
Subtotal: Global Air Traffic Mgmt RW APX-123	3,367 / 151.870	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	3,367 / 151.870	
Modification Item 2 of 6: Global Air Traffic Mgmt RW APX-118 Upgrade Kits														
A Kits														
Recurring														
Kit Qty- Upgrade A-Kits	972 / 4.076	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	972 / 4.076	
Engineering Change Orders	- / 1.123	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.123	
System Eng/Prog Mgt (SEPM)	- / 9.205	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 9.205	
Subtotal: Recurring	972 / 14.404	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	972 / 14.404	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup					Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UH&HH60A/L, CH47D/F, UH60M, MH47G, MH60M, A/MH6, AH64A/D/E, UAS				Modification Type: New or Improved Operational Capability				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
B Kits													
Recurring													
APX-123 Upgrade Kit (MWO)	2,375 / 26.666	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	2,375 / 26.666
Subtotal: Recurring	2,375 / 26.666	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2,375 / 26.666
Non-Recurring													
B-Kits Nonrecurring	- / 3.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.520
Subtotal: Non-Recurring	- / 3.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.520
Subtotal: Global Air Traffic Mgmt RW APX-118 Upgrade Kits	3,347 / 44.590	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	3,347 / 44.590
Modification Item 3 of 6: Global Air Traffic Mgmt RW ADS-B													
A Kits													
Recurring													
Kit Qty: ADS-B A-Kits (Installed w/box)	828 / 3.513	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	828 / 3.513
Engineering Change Orders	- / 4.079	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.079
Data	- / 3.462	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.462
Training Equipment	- / 3.885	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.885
Fielding	- / 0.845	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.845
System Eng/Prog Mgt (SEPM)	- / 7.887	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 7.887
System Test & Eval (ST&E)	- / 1.167	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.167
Other- PM Admin	- / 6.245	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.245
Subtotal: Recurring	828 / 31.083	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	828 / 31.083
Non-Recurring													
Non-Recurring Engineering	- / 35.236	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 35.236
Subtotal: Non-Recurring	- / 35.236	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 35.236
Subtotal: Global Air Traffic Mgmt RW ADS-B	828 / 66.319	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	828 / 66.319
Modification Item 4 of 6: Embedded GPS Inertial (EGI) Navigation System ECP													
A Kits													
Recurring													
Training/Data/Support Equipment	- / 2.070	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.070
Systems Engineering/Program Management	- / 2.000	- / 3.715	- / 3.491	- / 3.581	- / -	- / 3.581	- / 3.644	- / 3.716	- / 3.825	- / 4.532	Continuing	Continuing	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup						Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UH&HH60A/L, CH47D/F, UH60M, MH47G, MH60M, A/MH6, AH64A/D/E, UAS				Modification Type: New or Improved Operational Capability				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Fielding	- / 1.000	- / 0.120	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.120	
Subtotal: Recurring	- / 5.070	- / 3.835	- / 3.491	- / 3.581	- / -	- / 3.581	- / 3.644	- / 3.716	- / 3.825	- / 4.532	Continuing	Continuing	
B Kits													
Recurring													
EG+ Shipsets	86 / 13.129	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	86 / 13.129	
EGI EAGLE-M Shipsets MWO	- / -	- / -	35 / 5.099	24 / 4.702	- / -	24 / 4.702	- / -	- / -	28 / 4.640	13 / 2.176	Continuing	Continuing	
EGI EAGLE SOA Retrofit Kit Shipsets GFE	30 / 1.766	65 / 3.985	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	95 / 5.751	
EGI EAGLE SOA/429 Shipsets GFE	126 / 21.367	47 / 8.125	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	173 / 29.492	
Subtotal: Recurring	242 / 36.262	112 / 12.110	35 / 5.099	24 / 4.702	- / -	24 / 4.702	- / -	- / -	28 / 4.640	13 / 2.176	Continuing	Continuing	
Non-Recurring													
Systems Testing and Evaluation	- / -	- / 4.782	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.782	
Aircraft Integration	- / 25.661	- / -	- / 3.201	- / 10.252	- / -	- / 10.252	- / 14.124	- / 7.105	- / 2.765	- / 3.381	Continuing	Continuing	
Subtotal: Non-Recurring	- / 25.661	- / 4.782	- / 3.201	- / 10.252	- / -	- / 10.252	- / 14.124	- / 7.105	- / 2.765	- / 3.381	Continuing	Continuing	
Subtotal: Embedded GPS Inertial (EGI) Navigation System ECP	242 / 66.993	112 / 20.727	35 / 11.791	24 / 18.535	- / -	24 / 18.535	- / 17.768	- / 10.821	28 / 11.230	13 / 10.089	Continuing	Continuing	
Modification Item 5 of 6: Common Transponder (CXP)													
A Kits													
Recurring													
ADS-B A-Kit (Wire Harness)	- / -	- / 1.938	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.938	
System Test and Evaluation	- / -	- / 1.085	- / 1.106	- / 0.079	- / -	- / 0.079	- / 0.061	- / 0.082	- / 0.032	- / 0.033	Continuing	Continuing	
Systems Engineering/Program Management	- / -	- / 3.272	- / 3.897	- / 3.800	- / -	- / 3.800	- / 3.533	- / 3.772	- / 3.406	- / 3.176	Continuing	Continuing	
Fielding/Training	- / -	- / 1.043	- / 1.364	- / 1.356	- / -	- / 1.356	- / 1.016	- / 0.930	- / 0.688	- / 0.527	Continuing	Continuing	
Ancillary Procurements	- / -	- / 0.014	- / 0.013	- / 0.013	- / -	- / 0.013	- / 0.011	- / 0.011	- / 0.012	- / 0.012	Continuing	Continuing	
Subtotal: Recurring	- / -	- / 7.352	- / 6.380	- / 5.248	- / -	- / 5.248	- / 4.621	- / 4.795	- / 4.138	- / 3.748	Continuing	Continuing	
B Kits													
Recurring													
APX-123A B-Kit Spares	- / -	31 / 1.244	20 / 0.840	10 / 0.552	- / -	10 / 0.552	9 / 0.768	4 / 0.348	4 / 0.355	2 / 0.181	59 / 1.836	139 / 6.124	
APX-123 B-Kit Conversion Kit - MWO	- / -	101 / 0.705	201 / 1.960	30 / 0.813	- / -	30 / 0.813	25 / 0.807	13 / 0.390	10 / 0.288	- / -	620 / 34.003	1,000 / 38.966	
APX-123A B-Kit Production Line/GFE	- / -	119 / 4.774	81 / 2.352	42 / 2.319	- / -	42 / 2.319	35 / 2.985	16 / 1.392	16 / 1.419	10 / 0.905	95 / 6.932	414 / 23.078	
Subtotal: Recurring	- / -	251 / 6.723	302 / 5.152	82 / 3.684	- / -	82 / 3.684	69 / 4.560	33 / 2.130	30 / 2.062	12 / 1.086	774 / 42.771	1,553 / 68.168	
Non-Recurring													
ADS-B Out Non-Recurring Integration	- / -	- / 2.387	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.387	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup				Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: UH&HH60A/L, CH47D/F, UH60M, MH47G, MH60M, A/MH6, AH64A/D/E, UAS				Modification Type: New or Improved Operational Capability				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<i>Subtotal: Non-Recurring</i>	- / -	- / 2.387	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.387
<i>Subtotal: Common Transponder (CXP)</i>	- / -	251 / 16.462	302 / 11.532	82 / 8.932	- / -	82 / 8.932	69 / 9.181	33 / 6.925	30 / 6.200	12 / 4.834	Continuing	Continuing
Modification Item 6 of 6: Legacy GATM-RW Mods												
A Kits												
Non-Recurring												
Legacy GATM-RW Mods	- / 331.565	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 331.565
<i>Subtotal: Non-Recurring</i>	- / 331.565	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 331.565
<i>Subtotal: Legacy GATM-RW Mods</i>	- / 331.565	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 331.565
<i>Subtotal: Procurement, All Modification Items</i>	7,784 / 661.337	363 / 37.189	337 / 23.323	106 / 27.467	- / -	106 / 27.467	69 / 26.949	33 / 17.746	58 / 17.430	25 / 14.923	Continuing	Continuing
Installation												
Modification Item 1 of 6: Global Air Traffic Mgmt RW APX-123	134 / 0.206	63 / 0.093	175 / 2.940	335 / 2.528	- / -	335 / 2.528	400 / 2.629	350 / 2.061	110 / 0.198	- / -	- / -	1,567 / 10.655
Modification Item 2 of 6: Global Air Traffic Mgmt RW APX-118 Upgrade Kits	1,994 / 8.875	33 / 0.121	155 / 0.585	193 / 0.751	- / -	193 / 0.751	- / -	- / -	- / -	- / -	- / -	2,375 / 10.332
Modification Item 4 of 6: Embedded GPS Inertial (EGI) Navigation System ECP	- / -	- / -	- / -	35 / 0.070	- / -	35 / 0.070	24 / 0.048	- / -	- / -	28 / 0.056	13 / 0.026	100 / 0.200
Modification Item 5 of 6: Common Transponder (CXP)	- / -	- / -	- / -	101 / 0.150	- / -	101 / 0.150	201 / 0.382	30 / 0.057	25 / 0.047	13 / 0.019	630 / 1.568	1,000 / 2.223
<i>Subtotal: Installation</i>	2,128 / 9.081	96 / 0.214	330 / 3.525	664 / 3.499	- / -	664 / 3.499	625 / 3.059	380 / 2.118	135 / 0.245	41 / 0.075	643 / 1.594	5,042 / 23.410
Total												
Total Cost (Procurement + Support + Installation)	670.418	37.403	26.848	30.966	-	30.966	30.008	19.864	17.675	14.998	Continuing	Continuing

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 6: Global Air Traffic Mgmt RW APX-123

Manufacturer Information

Manufacturer Name: BAE Systems, Incorporated	Manufacturer Location: Greenlawn, NY
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Modification Work Order (MWO) - Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	134 / 0.206	63 / 0.093	175 / 2.940	335 / 2.528	- / -	335 / 2.528	400 / 2.629	350 / 2.061	110 / 0.198	- / -	- / -	1,567 / 10.655
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	134 / 0.206	63 / 0.093	175 / 2.940	335 / 2.528	- / -	335 / 2.528	400 / 2.629	350 / 2.061	110 / 0.198	- / -	- / -	1,567 / 10.655

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	134	15	16	16	16	43	44	44	44	83	84	84	84	100	100	100	100	88	88	87	87	27	27	28	28	-	-	-	-	-	1,567
Out	134	-	15	16	16	16	43	44	44	44	83	84	84	84	100	100	100	100	88	88	87	87	27	27	28	28	-	-	-	-	1,567

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 6: Global Air Traffic Mgmt RW APX-118 Upgrade Kits

Manufacturer Information

Manufacturer Name: BAE Systems, Incorporated	Manufacturer Location: Greenlawn, NY
Administrative Leadtime (in Months):	Production Leadtime (in Months):

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

Installation Information

Method of Implementation: Modification Work Order (MWO) - Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1,994 / 8.875	33 / 0.121	155 / 0.585	193 / 0.751	- / -	193 / 0.751	- / -	- / -	- / -	- / -	- / -	2,375 / 10.332
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1,994 / 8.875	33 / 0.121	155 / 0.585	193 / 0.751	- / -	193 / 0.751	- / -	- / -	- / -	- / -	- / -	2,375 / 10.332

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	1,994	8	8	8	9	38	39	39	39	49	48	48	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,375
Out	1,994	-	8	8	8	9	38	39	39	39	49	48	48	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,375

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 3 of 6: Global Air Traffic Mgmt RW ADS-B

Manufacturer Information

Manufacturer Name: SSAI	Manufacturer Location: Huntsville, AL
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Administrative Leadtime (in Months):	Production Leadtime (in Months):
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Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: Modification Work Order (MWO) - Contractor

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000

Installation Schedule

PYS	In	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 4 of 6: Embedded GPS Inertial (EGI) Navigation System ECP

Manufacturer Information

Manufacturer Name: Honeywell, Incorporated	Manufacturer Location: Clearwater, FL
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: Modification Work Order (MWO)

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	- / -	- / -	- / -	35 / 0.070	- / -	35 / 0.070	- / -	- / -	- / -	- / -	- / -	35 / 0.070
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	24 / 0.048	- / -	- / -	- / -	- / -	24 / 0.048
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	28 / 0.056	- / -	28 / 0.056
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 0.026	13 / 0.026
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	- / -	- / -	- / -	35 / 0.070	- / -	35 / 0.070	24 / 0.048	- / -	- / -	28 / 0.056	13 / 0.026	100 / 0.200

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	9	9	9	8	6	6	6	6	-	-	-	-	-	-	-	-	7	7	7	7	13	100
Out	-	-	-	-	-	-	-	-	-	-	9	9	9	8	6	6	6	6	-	-	-	-	-	-	-	-	7	7	7	20	100

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup	Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft
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ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 5 of 6: Common Transponder (CXP)

Manufacturer Information

Manufacturer Name: BAE Systems, Incorporated	Manufacturer Location: Greenlawn, NY
Administrative Leadtime (in Months): 5	Production Leadtime (in Months): 16

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

Installation Information

Method of Implementation: MWO

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	101 / 0.150	- / -	101 / 0.150	- / -	- / -	- / -	- / -	- / -	101 / 0.150
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	201 / 0.382	- / -	- / -	- / -	- / -	201 / 0.382
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	30 / 0.057	- / -	- / -	- / -	30 / 0.057
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 0.047	- / -	- / -	25 / 0.047
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 0.019	- / -	13 / 0.019
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 0.018	10 / 0.018
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	620 / 1.550	620 / 1.550
Total	- / -	- / -	- / -	101 / 0.150	- / -	101 / 0.150	201 / 0.382	30 / 0.057	25 / 0.047	13 / 0.019	630 / 1.568	1,000 / 2.223

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	25	25	25	26	50	50	50	51	7	7	8	8	6	6	6	7	3	3	3	4	630	1,000
Out	-	-	-	-	-	-	-	-	-	-	25	25	25	26	50	50	50	51	7	7	8	8	6	6	6	7	3	3	3	634	1,000

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 8859AA0711 / GATM Rollup			Modification Number / Title: AA0704 / GATM Rotary Wing Aircraft	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 6 of 6: Legacy GATM-RW Mods							
Manufacturer Information							
Manufacturer Name: N/A				Manufacturer Location: N/A			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): N/A					Installation Quantity: 0		

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305204A, 0305233A
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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>)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	1,872,817.000	5,365.556	6,164.560	-	-	-	-	-	-	-	-	36,216.774

Description:

The Tactical Unmanned Aircraft System (TUAS) provides Army Brigade Combat Teams, Aviation Brigades, and Special Operation Groups situational awareness, improved wide-area target acquisition, Laser Designation, and high value target (HVT) tracking to conduct both shaping and decisive operations with greatly increased lethality. The TUAS meets the need for a day/night, multi sensor collection system with improved connectivity to joint forces that provides real time battle information that cannot be observed from standoff airborne sensor systems, ground collection systems, and scouts. The key performance parameters are blocked into RQ-7B (production) thresholds and subsequent upgrade objectives. The RQ-7B system is a Reconnaissance Surveillance Target Acquisition (RSTA), Command, Control, Communications, and Intelligence (C3I) system that supports Brigade, Battalion, and lower level elements. The RQ-7B Shadow has logged approximately 1,180,000 flight hours, most of which were flown in support of Overseas Contingency Operations (OCO).

The TUAS RQ-7B completed production of 104 Army systems in 2011 (FY 2009 Funding) and entered a modifications phase. These modifications are divided into three primary sections: RQ-7B v2, System Modifications, and Payload Modifications. The RQ-7B v2 or Shadow v2 effort incorporates Type 1 Encryption, STANAG 4586 Compliant Software, a Universal Ground Control Station (UGCS), a Universal Ground Data Terminal (UGDT), a STANAG 4586 compliant Portable Ground Control Station, and standardizes modifications introduced during the wars in Iraq and Afghanistan. System Modifications and Payload Modifications consolidate development activities not included in the Shadow v2 modification.

In 2009, the Product Office placed the last of the authorized 104 systems on contract, ending the Production phase of the acquisition. In 2010, the Army G8 established a RQ-7B UAV MODS Aircraft Procurement Exhibit approving several modifications for development and production. These modifications will be incrementally integrated, tested, and fielded in accordance with the technology readiness and funding profile. The major modifications are grouped as follows: (1) v2 Modifications (includes TCDL and Encryption), (2) Payload Modifications, (3) Air Vehicle Modifications, and (4) Ground Support Modifications. The RQ-7B v2 will be compliant with STANAG 4586 and the Joint Interoperability Profiles. To achieve this, the system incorporates the UGCS and UGDT along with an upgraded Air Data Terminal, Airborne Computer, and onboard software.

The RQ-7B v2 Shadow upgrade program complies with the congressionally mandated Tactical Control Data Link (TCDL) and North Atlantic Treaty Organization (NATO) Standardization Agreement 4586 in order to meet requirements in the Operational Requirements Document, provide a secure data link, an enhanced propulsion system, payload improvements, avionics improvements, and ground equipment improvements.

On 16 Nov 2017, the Army Acquisition Executive (AAE) approved an increase to the Shadow Army Acquisition Objective (AAO) from 104 to 115 Shadow systems which provides additional capability in the Combat Aviation Brigades (CABs).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft		P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305204A, 0305233A
Line Item MDAP/MAIS Code: N/A		

Changed the P-Form Modification structure to comply with MIL-STD-881C, align with the R-Forms, and align with ACAT-I reporting requirements. The OSRVT Modification moved to Modification Line A00121 in 2017.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	183.160	150.114	6.983	-	6.983	-	16.366	-	-
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	10.000	4.000	2.000	-	2.000	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	193.160	154.114	8.983	-	8.983	-	16.366	-	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft

P-1 Line Item Number / Title:
9555A00018 / RQ-7 UAV MODS

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0305204A, 0305233A

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-3a	A00018 / RQ-7 UAV MODS (UNCLASSIFIED)				- / 1,872.817	- / 193.160	- / 154.114	- / 8.983	- / -	- / 8.983
P-40	Total Gross/Weapon System Cost				- / 1,872.817	- / 193.160	- / 154.114	- / 8.983	- / -	- / 8.983

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A00018 / RQ-7 UAV MODS (UNCLASSIFIED)				- / -	- / 16.366	- / -	- / -	- / -	- / 2,245.440
P-40	Total Gross/Weapon System Cost				- / -	- / 16.366	- / -	- / -	- / -	- / 2,245.440

*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:
On 16 Nov 2017 the Army Acquisition Executive (AAE) approved an increase to the Shadow Army Acquisition Objective (AAO) from 104 to 115 Shadow systems. FY 2020 Funding of \$8.983 million provides for the procurement and fielding of Shadow system components; 18 Block III Upgrade Kit Installations and New Equipment Training (NET). The Block III Upgrade Kit includes Weatherization, Small Mission Computer A-kit, Electro Optical / Infrared / Laser Designator (EO/IR/LD) Universal Interface Assembly, Block III Engine, Communications Relay Installation Kit, and Voice over Internet Protocol (VoIP). Funding also procures Engineering, Logistics, and Fielding Support.

In accordance with Section 1815 of the FY2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440

(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)	1,872,817.000	5,365.556	6,164.560	-	-	-	-	-	-	-	-	36,216.774

Description:

Justification:

FY 2020 Funding of \$8.983 million provides for the procurement and fielding of Shadow system components; 18 Block III Upgrade Kit Installations and New Equipment Training (NET). The Block III Upgrade Kit includes Weatherization, Small Mission(SMC) Computer A-kit, Electro Optical / Infrared / Laser Designator (EO/IR/LD) Universal Interface Assembly, Block III Engine, Communications Relay Installation Kit, and Voice over Internet Protocol (VoIP). Funding also procures Engineering, Logistics, and Fielding Support.

Block III Air Vehicle Modifications:

Air Vehicle (AV) Modifications include the procurement of Block III Upgrade Kits, initial spares Block III Kits, and installation of those kits via Shadow aircraft retrofits. Weatherization modifications allow the AV to fly in low visibility conditions and in up to two inches of rain per hour. The SMC is an onboard computer that provides airborne processing power. The SMC addresses obsolescence concerns, features a dual processor, and also contains 50x more processing power than the current computer. The EO/ IR/LD Universal Interface Assembly eliminates reliance on a proprietary payload interface, introducing the capability to support payloads from multiple vendors. The Block III engine improves reliability over the current engine, increases thrust and reduces the noise signature of the Shadow system. The Communication Relay upgrade will enable voice communications to additional users who utilize other waveforms in the VHF and UHF bands. The VoIP upgrade will extend voice communications range from 85 km to 125 km, and will also provide a more reliable means of voice communications.

Ground Support Modifications:

Ground Support Modifications include New Equipment Training (NET) for newly fielded v2 systems, Launchers for Block III upgrade kits, and Government Furnished Equipment (GFE). NET is necessary to introduce new equipment to units that transition from the Shadow V2 to the Shadow V2 Block III system. The Block III upgrade kit requires 1 high powered launcher per unit to support operations at high altitudes. These high powered launchers will replace 1 of the standard launchers which currently reside with the unit. The high powered launchers are hydraulic-pneumatic rail launchers, enabling AV launch in austere tactical locations and at high altitudes with the Block III upgrade kits. GFE is required to procure hardware to support the production of Shadow v2 retrofit kits in production.

Payloads Modifications:

Payload modifications include program management, engineering, and logistics support to develop a competitive contract to select, integrate, and procure improved Shadow EO/IR/LD payloads.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	183.160	150.114	6.983	-	6.983	-	16.366	-	-
ANG									
Quantity	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Total Obligation Authority	10.000	4.000	2.000	-	2.000	-	-	-	-
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	193.160	154.114	8.983	-	8.983	-	16.366	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army											Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS							Modification Number / Title: A00018 / RQ-7 UAV MODS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A				Modification Type: UNCLASSIFIED				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 6: SHADOW Version 2 (v2)													
A Kits													
Recurring													
Software	- / 11.648	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 11.648	
Pubs/Tech Data	- / 3.747	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.747	
GFE	- / 60.287	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 60.287	
Training Equipment	46 / 37.515	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	46 / 37.515	
Training (NET)	- / 51.798	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 51.798	
Program Management	- / 40.748	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 40.748	
Engineering	- / 20.980	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 20.980	
Logistics	- / 25.707	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 25.707	
Subtotal: Recurring	46 / 252.430	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 252.430	
Non-Recurring													
Nonrecurring Engineering Obsolescence	- / 79.877	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 79.877	
Subtotal: Non-Recurring	- / 79.877	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 79.877	
B Kits													
Recurring													
Shadow v2 Retrofit Kits	100 / 732.964	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	100 / 732.964	
UGCS Only System Retrofit	28 / 89.763	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	28 / 89.763	
Launchers	100 / 42.204	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	100 / 42.204	
MMF Retrofit Kits	34 / 34.653	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	34 / 34.653	
Subtotal: Recurring	262 / 899.584	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	262 / 899.584	
Subtotal: SHADOW Version 2 (v2)	308 / 1,231.891	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	308 / 1,231.891	
Modification Item 2 of 6: SHADOW SYSTEM MODIFICATIONS													
A Kits													
Recurring													
Weatherization	268 / 8.684	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	268 / 8.684	
Nonrecurring Engineering (NRE)	- / 2.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.150	
Program Management	- / 5.904	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 5.904	
Engineering	- / 2.051	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.051	
Logistics	- / 2.723	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.723	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10					P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS					Modification Number / Title: A00018 / RQ-7 UAV MODS			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A			Modification Type: UNCLASSIFIED					Related RDT&E PEs:					
Financial Plan	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	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Communication Relay Installation Kit	228 / 11.985	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	228 / 11.985	
Subtotal: Recurring	496 / 33.497	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	496 / 33.497	
B Kits													
Recurring													
Shadow Expeditionary Kit	11 / 19.986	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	11 / 19.986	
Voice Over Internet Protocol	171 / 7.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	171 / 7.150	
Attrition Air Vehicles	72 / 57.998	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	72 / 57.998	
Small Mission Computer	144 / 15.215	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	144 / 15.215	
Block III Engine	232 / 15.732	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	232 / 15.732	
Subtotal: Recurring	630 / 116.081	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	630 / 116.081	
Subtotal: SHADOW SYSTEM MODIFICATIONS	1,126 / 149.578	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	1,126 / 149.578	
Modification Item 3 of 6: SHADOW PAYLOAD UPGRADES/MODIFICATIONS													
A Kits													
Recurring													
Program Management	- / 3.506	- / 1.408	- / 0.486	- / -	- / -	- / -	- / -	- / 0.312	- / -	- / -	- / 0.000	- / 5.712	
Engineering	- / 1.399	- / 0.328	- / 0.486	- / -	- / -	- / -	- / -	- / 0.340	- / -	- / -	- / 0.000	- / 2.553	
Logistics	- / 2.698	- / 0.328	- / 0.486	- / -	- / -	- / -	- / -	- / 0.341	- / -	- / -	- / 0.000	- / 3.853	
EO/IR/LD Universal Interface Assembly	228 / 14.180	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	228 / 14.180	
Subtotal: Recurring	228 / 21.783	- / 2.064	- / 1.458	- / -	- / -	- / -	- / -	- / 0.993	- / -	- / -	- / -	228 / 26.298	
B Kits													
Recurring													
Laser Designator	106 / 108.850	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	106 / 108.850	
EO/IR/LD Upgrade Payloads	- / -	46 / 30.042	168 / 98.616	- / -	- / -	- / -	- / -	19 / 13.509	- / -	- / -	- / 0.000	233 / 142.167	
Boresight Tools	19 / 1.749	60 / 5.340	42 / 3.818	- / -	- / -	- / -	- / -	18 / 1.864	- / -	- / -	- / 0.000	139 / 12.771	
Training	- / 5.700	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 5.700	
Subtotal: Recurring	125 / 116.299	106 / 35.382	210 / 102.434	- / -	- / -	- / -	- / -	37 / 15.373	- / -	- / -	- / -	478 / 269.488	
Subtotal: SHADOW PAYLOAD UPGRADES/MODIFICATIONS	353 / 138.082	106 / 37.446	210 / 103.892	- / 0.000	- / -	- / 0.000	- / -	37 / 16.366	- / -	- / -	- / -	706 / 295.786	
Modification Item 4 of 6: OSRVT MODIFICATIONS													
A Kits													
Recurring													
Army TIES Retrofit Kits	470 / 56.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	470 / 56.900	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Models of Systems Affected: N/A	Modification Type: UNCLASSIFIED	Related RDT&E PEs:
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Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Program Management	- / 15.763	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 15.763
Logistics/TPF/NET	- / 12.286	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 12.286
Subtotal: Recurring	470 / 84.949	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	470 / 84.949
Non-Recurring												
Non Recurring Engineering	- / 2.570	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.570
OSRVT Software License	- / 2.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.000
Engineering/Technical Services	- / 8.753	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.753
Subtotal: Non-Recurring	- / 13.323	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.323
B Kits												
Recurring												
OSRVT System	70 / 11.108	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	70 / 11.108
OSRVT Retrofit Kits	2,937 / 212.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	2,937 / 212.900
OSRVT MDAS Antennas	273 / 18.726	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	273 / 18.726
BI-Directional Retrofit Kits	280 / 12.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	280 / 12.260
Subtotal: Recurring	3,560 / 254.994	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3,560 / 254.994
Subtotal: OSRVT MODIFICATIONS	4,030 / 353.266	- / -	- / -	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	4,030 / 353.266
Modification Item 5 of 6: Air Vehicle Modifications												
A Kits												
Recurring												
Engineering	- / -	- / 0.905	- / 0.439	- / 0.350	- / -	- / 0.350	- / -	- / -	- / -	- / -	- / 0.000	- / 1.694
Logistics	- / -	- / 0.282	- / 0.453	- / 0.100	- / -	- / 0.100	- / -	- / -	- / -	- / -	- / 0.000	- / 0.835
Program Management	- / -	- / 1.363	- / 0.453	- / 0.100	- / -	- / 0.100	- / -	- / -	- / -	- / -	- / 0.000	- / 1.916
Subtotal: Recurring	- / -	- / 2.550	- / 1.345	- / 0.550	- / -	- / 0.550	- / -	- / -	- / -	- / -	- / -	- / 4.445
Non-Recurring												
Nonrecurring Engineering Obsolescence	- / -	- / 1.500	- / 0.288	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.788
Subtotal: Non-Recurring	- / -	- / 1.500	- / 0.288	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.788
B Kits												
Recurring												
Block 3 Initial Spares Package	- / -	46 / 2.022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	46 / 2.022
GFE	- / -	- / 4.080	- / 2.125	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.205
Mission Computer	- / -	120 / 7.560	120 / 7.721	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	240 / 15.281
Block III Kit Installs	- / -	- / -	39 / 9.555	18 / 4.500	- / -	18 / 4.500	- / -	- / -	- / -	- / -	- / 0.000	57 / 14.055

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS						Modification Number / Title: A00018 / RQ-7 UAV MODS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: N/A				Modification Type: UNCLASSIFIED				Related RDT&E PEs:				
Financial Plan	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Air Vehicle (Block III)	- / -	10 / 15.371	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	10 / 15.371
Additional UAS	- / -	6 / 72.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	6 / 72.000
Subtotal: Recurring	- / -	182 / 101.033	159 / 19.401	18 / 4.500	- / -	18 / 4.500	- / -	- / -	- / -	- / -	- / -	359 / 124.934
Subtotal: Air Vehicle Modifications	- / -	182 / 105.083	159 / 21.034	18 / 5.050	- / -	18 / 5.050	- / -	- / -	- / -	- / -	- / -	359 / 131.167
Modification Item 6 of 6: Ground Support Modifications												
A Kits												
Recurring												
Training NET	- / -	- / 4.143	- / 6.477	- / 3.183	- / -	- / 3.183	- / -	- / -	- / -	- / -	- / 0.000	- / 13.803
Program Management	- / -	- / 0.885	- / 0.748	- / 0.400	- / -	- / 0.400	- / -	- / -	- / -	- / -	- / 0.000	- / 2.033
Engineering	- / -	- / 1.245	- / 0.694	- / 0.175	- / -	- / 0.175	- / -	- / -	- / -	- / -	- / 0.000	- / 2.114
Logistics	- / -	- / 0.904	- / 0.669	- / 0.175	- / -	- / 0.175	- / -	- / -	- / -	- / -	- / 0.000	- / 1.748
Subtotal: Recurring	- / -	- / 7.177	- / 8.588	- / 3.933	- / -	- / 3.933	- / -	- / -	- / -	- / -	- / -	- / 19.698
Non-Recurring												
Nonrecurring Engineering	- / -	- / 0.471	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.471
Subtotal: Non-Recurring	- / -	- / 0.471	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.471
B Kits												
Recurring												
Universal Ground Control Station (UGCS)	- / -	11 / 22.231	4 / 8.256	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	15 / 30.487
GFE	- / -	- / 4.042	- / 5.518	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 9.560
Launchers	- / -	35 / 16.710	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	35 / 16.710
Universal Ground Data Terminal (UGDT)	- / -	- / -	4 / 6.826	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	4 / 6.826
Subtotal: Recurring	- / -	46 / 42.983	8 / 20.600	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	54 / 63.583
Subtotal: Ground Support Modifications	- / -	46 / 50.631	8 / 29.188	- / 3.933	- / -	- / 3.933	- / -	- / -	- / -	- / -	- / -	54 / 83.752
Subtotal: Procurement, All Modification Items	5,817 / 1,872.817	334 / 193.160	377 / 154.114	18 / 8.983	- / -	18 / 8.983	- / -	37 / 16.366	- / -	- / -	- / -	6,583 / 2,245.440
Installation												
Modification Item 1 of 6: SHADOW Version 2 (v2)	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
Modification Item 2 of 6: SHADOW SYSTEM MODIFICATIONS	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
Modification Item 3 of 6: SHADOW PAYLOAD UPGRADES/MODIFICATIONS	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
Modification Item 4 of 6: OSRVT MODIFICATIONS	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS						Modification Number / Title: A00018 / RQ-7 UAV MODS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: N/A				Modification Type: UNCLASSIFIED				Related RDT&E PEs:				
Financial Plan	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
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Modification Item 5 of 6: Air Vehicle Modifications	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
Modification Item 6 of 6: Ground Support Modifications	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
<i>Subtotal: Installation</i>	<i>6 / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>6 / 0.000</i>
Total												
Total Cost (Procurement + Support + Installation)	1,872.817	193.160	154.114	8.983	-	8.983	-	16.366	-	-	-	2,245.440

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 6: SHADOW Version 2 (v2)

Manufacturer Information

Manufacturer Name: AAI	Manufacturer Location: Hunt Valley, MD
Administrative Leadtime (in Months): 7	Production Leadtime (in Months): 18

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

Installation Information

Method of Implementation: FFP Contract

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 2 of 6: SHADOW SYSTEM MODIFICATIONS

Manufacturer Information

Manufacturer Name: AAI	Manufacturer Location: Hunt Valley, MD
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 6

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

Installation Information

Method of Implementation: FFP Contract

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 3 of 6: SHADOW PAYLOAD UPGRADES/MODIFICATIONS

Manufacturer Information

Manufacturer Name: AAI	Manufacturer Location: Hunt Valley, MD
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 6

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

Installation Information

Method of Implementation: FFP Contract

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

PYS	In	Out	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 4 of 6: OSRVT MODIFICATIONS

Manufacturer Information

Manufacturer Name: AAI	Manufacturer Location: Hunt Valley, MD
Administrative Leadtime (in Months): 4	Production Leadtime (in Months): 12

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

Installation Information

Method of Implementation: FFP Contract

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

PYS	In	Out	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 5 of 6: Air Vehicle Modifications

Manufacturer Information

Manufacturer Name: AAI	Manufacturer Location: Hunt Valley, MD
Administrative Leadtime (in Months): 18	Production Leadtime (in Months): 18

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

Installation Information

Method of Implementation: FFP

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9555A00018 / RQ-7 UAV MODS	Modification Number / Title: A00018 / RQ-7 UAV MODS
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Modification Item 6 of 6: Ground Support Modifications

Manufacturer Information

Manufacturer Name: AAI	Manufacturer Location: Hunt Valley, MD
Administrative Leadtime (in Months): 7	Production Leadtime (in Months): 18

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

Installation Information

Method of Implementation: FFP

Installation Cost	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
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2018	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2019	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2022	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2023	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
FY 2024	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
To Complete	0 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000
Total	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000

Installation Schedule

PYS	In	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft	P-1 Line Item Number / Title: 9556A01002 / UAS MODS
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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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>)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	355.692	19.470	26.373	-	-	-	-	-	-	-	-	42.184

Description:

The One System Remote Video Terminal (OSRVT) systems require an update to an Increment II OSRVT. The OSRVT Increment II Upgrade Program of Record (POR) began in FY 2012. The OSRVT Increment II consists of a Remote Operations Video Enhanced Receiver (ROVER), Miltope tablet, Antennas, UHF Modem, Type I encryption, Ku-Directional Antennas (KuDA) with an On-The-Move (OTM) capable variant, and an extended range Mobile Directional Antennas System (MDAS). Software supports decoding Telemetry Data from multiple Manned/Unmanned Aircraft Systems, provides Electro-Optical (EO)/Infrared (IR) payload control, and supports off-target calculations. OSRVT supports current operations and emerging requirements.

The OSRVT MODS APE A000121000, began in FY 2017. Prior to FY2017, OSRVT Procurement funds were provided via the SHADOW MODS APE A00018000.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	22.109	17.446	6.633	-	6.633	2.735	2.737	-
ANG	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	4.000	3.600	3.572	-	3.572	1.473	1.474	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	26.109	21.046	10.205	-	10.205	4.208	4.211	-

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 02: Modification of Aircraft / BSA 10: Modification of Aircraft **P-1 Line Item Number / Title:** 9556A01002 / UAS MODS

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 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-3a	A00121 / OSRVT (UNCLASSIFIED)				- / 27.744	- / 26.109	- / 21.046	- / 10.205	- / -	- / 10.205
P-40	Total Gross/Weapon System Cost				- / 27.744	- / 26.109	- / 21.046	- / 10.205	- / -	- / 10.205

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	A00121 / OSRVT (UNCLASSIFIED)				- / 4.208	- / 4.211	- / -	- / -	- / -	- / 93.523
P-40	Total Gross/Weapon System Cost				- / 4.208	- / 4.211	- / -	- / -	- / -	- / 93.523

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

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

Justification:
 FY2020 Base funding of \$10.205M provides for procurement of 413 On-the-Move (OTM) modification of the Total OSRVT Basis of Issue Plan (BOIP) of 3,323. The OTM Modification enables full OSRVT functionality while on moving vehicle mounted systems.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10	P-1 Line Item Number / Title: 9556A01002 / UAS MODS	Modification Number / Title: A00121 / OSRVT

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	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>)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523

(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>)	355.692	19.470	26.373	-	-	-	-	-	-	-	-	42.184

Description:

The One System Remote Video Terminal (OSRVT) systems requires an update to an Increment II OSRVT. The OSRVT Increment II Upgrade Program of Record (POR) began in FY 2012. The OSRVT Increment II consists of a Remote Operations Video Enhanced Receiver (ROVER), Miltope tablet, Antennas, UHF Modem, Type I encryption, Ku-Directional Antennas (KuDA) with an On-The-Move (OTM) capable variant, and an extended range Mobile Directional Antennas System (MDAS). Software supports decoding Telemetry Data from multiple Unmanned Aircraft Systems (UASs), provides Electro-Optical (EO)/ Infrared (IR) payload control, and supports off target calculations.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	22.109	17.446	6.633	-	6.633	2.735	2.737	-	-
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	4.000	3.600	3.572	-	3.572	1.473	1.474	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Army										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10				P-1 Line Item Number / Title: 9556A01002 / UAS MODS						Modification Number / Title: A00121 / OSRVT			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A				Modification Type: UNCLASSIFIED				Related RDT&E PEs:					
Financial Plan	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	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> OSRVT Mods													
B Kits													
Recurring													
OSRVT System	59 / 9.540	99 / 7.513	61 / 9.813	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	219 / 26.866	
Bi-Directional Retrofit Kits	750 / 10.030	1,106 / 9.816	309 / 4.196	413 / 4.220	- / -	413 / 4.220	- / -	- / -	- / -	- / -	- / 0.000	2,578 / 28.262	
MDAS	8 / 0.987	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	8 / 0.987	
<i>Subtotal: Recurring</i>	<i>817 / 20.557</i>	<i>1,205 / 17.329</i>	<i>370 / 14.009</i>	<i>413 / 4.220</i>	<i>- / -</i>	<i>413 / 4.220</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>2,805 / 56.115</i>	
Non-Recurring													
Non-Recurring Engineering	- / 0.802	- / 0.201	- / 0.948	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.951	
Program Management	- / 0.868	- / 2.274	- / 1.261	- / 0.895	- / -	- / 0.895	- / 0.629	- / 0.630	- / -	- / -	- / 0.000	- / 6.557	
Engineering Technical Services	- / 0.868	- / 1.171	- / 1.261	- / 1.170	- / -	- / 1.170	- / 0.823	- / 0.823	- / -	- / -	- / 0.000	- / 6.116	
Logistics/TPF/NET	- / 4.649	- / 5.134	- / 3.567	- / 3.920	- / -	- / 3.920	- / 2.756	- / 2.758	- / -	- / -	- / 0.000	- / 22.784	
<i>Subtotal: Non-Recurring</i>	<i>- / 7.187</i>	<i>- / 8.780</i>	<i>- / 7.037</i>	<i>- / 5.985</i>	<i>- / -</i>	<i>- / 5.985</i>	<i>- / 4.208</i>	<i>- / 4.211</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 37.408</i>	
<i>Subtotal: OSRVT Mods</i>	<i>817 / 27.744</i>	<i>1,205 / 26.109</i>	<i>370 / 21.046</i>	<i>413 / 10.205</i>	<i>- / -</i>	<i>413 / 10.205</i>	<i>- / 4.208</i>	<i>- / 4.211</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>2,805 / 93.523</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>817 / 27.744</i>	<i>1,205 / 26.109</i>	<i>370 / 21.046</i>	<i>413 / 10.205</i>	<i>- / -</i>	<i>413 / 10.205</i>	<i>- / 4.208</i>	<i>- / 4.211</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>2,805 / 93.523</i>	
Installation													
<i>Subtotal: Installation</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	
Total													
Total Cost (Procurement + Support + Installation)	27.744	26.109	21.046	10.205	-	10.205	4.208	4.211	-	-	-	93.523	

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Exhibit P-3a, Individual Modification: PB 2020 Army					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 02 / 10			P-1 Line Item Number / Title: 9556A01002 / UAS MODS			Modification Number / Title: A00121 / OSRVT	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: OSRVT Mods							
Manufacturer Information							
Manufacturer Name: Textron/AAI				Manufacturer Location: Hunt Valley, MD			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 12			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates			Feb 2020				
Delivery Dates							
Installation Information							
Method of Implementation (Organic): FFP Contract					Installation Quantity: 0		

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics

P-1 Line Item Number / Title:
3632AZ3504 / Aircraft Survivability Equipment

ID Code (A=Service Ready, B=Not Service Ready): **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>)	686.849	66.804	57.170	52.297	-	52.297	71.065	99.082	167.407	148.045	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	11.565	-	-	-	-	-	-	-	-	-	-	11.565
Net Procurement (P-1) (<i>\$ in Millions</i>)	675.284	66.804	57.170	52.297	-	52.297	71.065	99.082	167.407	148.045	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	11.565	-	-	-	-	-	-	-	-	-	-	11.565
Total Obligation Authority (<i>\$ in Millions</i>)	686.849	66.804	57.170	52.297	-	52.297	71.065	99.082	167.407	148.045	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	23,684.448	2,087.625	-	-	-	-	-	-	6,438.731	5,694.038	Continuing	Continuing

Description:

The Aircraft Survivability Equipment (ASE) budget line includes ASE Laser Countermeasures (AZ3508) and ASE Radio Frequency Countermeasures (AZ3511).

AZ3508 ASE Laser CM

Army Procurement Objective (APO) = 1,332 (APO based on B-Kits)

The AN/AVR-2B Laser Detecting Set (LDS) installed on Army rotary-wing aircraft passively detects laser-aided weapons targeting the aircraft and alerts aircrews, allowing them to engage the threat or maneuver to break the targeting. The system detects aircraft illumination by laser rangefinders, laser target designators, and laser beam rider surface-to-air missiles. The system provides the aircrew visual and aural warnings prioritized by threat lethality using 360 degree azimuth and 90 degree elevation field of view coverage.

AZ3511 Radio Frequency CM

APO = 1,200 (APO based on B-Kits)

The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes Radio Frequency (RF) emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1, APR-39C(V)1/4, serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) Radar Warning Receiver (RWR) implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3.

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics	P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Phase 2A is RWR Modernization begins by adopting the United States Navy APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Phase 2B, the APR-39E(V)2 (MRWR), is an Army Engineering Change Proposal (ECP) to the APR-39D(V)2 that will implement enhanced hardware and software upgrades to keep the APR-39 technically relevant against new and emerging agile threats

Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft; Material Development Decision (MDD) for this ECM jamming capability phase is not expected until later in the Future Years Defense Program (FYDP).

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	66.804	57.170	52.297	-	52.297	71.065	99.082	167.407	148.045
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	66.804	57.170	52.297	-	52.297	71.065	99.082	167.407	148.045

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics
P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment

ID Code (A=Service Ready, B=Not Service Ready): **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	AZ3508 / ASE Laser CM				- / 430.935	- / 11.961	- / 6.035	- / 5.944	- / -	- / 5.944
P-5	AZ3511 / Radio Frequency CM	P-5a			- / 255.914	- / 54.843	- / 51.135	- / 46.353	- / -	- / 46.353
P-40	Total Gross/Weapon System Cost				- / 686.849	- / 66.804	- / 57.170	- / 52.297	- / -	- / 52.297

*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:

AZ3508 ASE Laser CM: Fiscal Year (FY) 2020 Base procurement dollars in the amount of \$5.944 million supports CH-47F/UH-60L A-Kit installation on Rotary Wing aircraft in support of required operational capabilities and integration of AN/AVR-2B LDS with other ASE systems.

AZ3511 Radio Frequency CM: Fiscal Year (FY) 2020 Base Procurement dollars in the amount of \$46.353 million funds procurement and fielding of APR-39D(V)2 A-Kits and B-Kits on aircraft, systems test and evaluation, mission data set (MDS), other software, training, depot stand up, other logistics, and systems engineering and program management.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Army						Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10			P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment			Item Number / Title [DODIC]: AZ3508 / ASE Laser CM		
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)			430.935	11.961	6.035	5.944	-	5.944
Less PY Advance Procurement (\$ in Millions)			11.565	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			419.370	11.961	6.035	5.944	-	5.944
Plus CY Advance Procurement (\$ in Millions)			11.565	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			430.935	11.961	6.035	5.944	-	5.944
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)			-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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																		
Non Recurring Engineering (A-Kit)	-	-	13.688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-Kit Procurement	42.382	1,113	47.171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-Kit Installation UH-60L	74.392	701	52.149	136.848	46	6.295	74.762	21	1.570	-	-	-	-	-	-	-	-	-
A-Kit filters	-	-	18.529	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-Kit Procurement	146.928	1,332	195.708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Systems Engineering	-	-	17.876	-	-	0.538	-	-	0.292	-	-	0.267	-	-	-	-	-	0.267
Program Management	-	-	16.157	-	-	0.658	-	-	0.235	-	-	0.326	-	-	-	-	-	0.326
Prime Contractor Prgm Mgt / Engr Spt	-	-	6.170	-	-	0.100	-	-	0.081	-	-	0.100	-	-	-	-	-	0.100
Software	-	-	9.326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Engineering Changes	-	-	0.638	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Systems Test and Evaluation	-	-	23.953	-	-	3.593	-	-	2.042	-	-	1.464	-	-	-	-	-	1.464
Training / Logistics	-	-	20.526	-	-	0.234	-	-	1.411	-	-	1.542	-	-	-	-	-	1.542
Depot / Field Support	-	-	5.986	-	-	0.513	-	-	0.374	-	-	0.085	-	-	-	-	-	0.085
Fielding	-	-	2.870	-	-	0.030	-	-	-	-	-	-	-	-	-	-	-	-
Other Procurement	-	-	0.188	-	-	-	-	-	0.030	-	-	-	-	-	-	-	-	-
A-Kit Installation CH-47F	-	-	-	-	-	-	-	-	-	90.000	24	2.160	-	-	-	90.000	24	2.160
<i>Subtotal: Recurring Cost</i>	-	-	430.935	-	-	11.961	-	-	6.035	-	-	5.944	-	-	-	-	-	5.944

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10		P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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)
<i>Subtotal: Flyaway Cost</i>	-	-	430.935	-	-	11.961	-	-	6.035	-	-	5.944	-	-	-	-	-	5.944
Gross/Weapon System Cost	-	-	430.935	-	-	11.961	-	-	6.035	-	-	5.944	-	-	-	-	-	5.944

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	11.961	6.035	5.944	-	5.944
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	11.961	6.035	5.944	-	5.944

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Exhibit P-5, Cost Analysis: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment	Item Number / Title [DODIC]: AZ3511 / Radio Frequency CM
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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)	255.914	54.843	51.135	46.353	-	46.353
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	255.914	54.843	51.135	46.353	-	46.353
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	255.914	54.843	51.135	46.353	-	46.353

(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)	8,824.621	1,713.844	-	-	-	-

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																		
Non Recurring Cost																		
A-Kit NRE	-	-	128.166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	128.166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Flyaway Cost</i>	-	-	128.166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardware Cost																		
Recurring Cost																		
A-Kit Procurement ^(†)	93.790	105	9.848	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-Kit Installs	-	-	-	-	-	-	-	-	2.000	-	-	2.025	-	-	-	-	-	2.025
B-Kit Procurement ^(†)	449.716	67	30.131	728.379	29	21.123	729.833	6	4.379	-	-	-	-	-	-	-	-	-
Replacement Flight Line Test Sets	-	-	9.169	-	-	-	-	-	-	-	-	6.000	-	-	-	-	-	6.000
Retrofit	-	-	3.221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-Kit Spares	-	-	4.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	56.469	-	-	21.123	-	-	6.379	-	-	8.025	-	-	-	-	-	8.025
Non Recurring Cost																		
System Test and Evaluation	-	-	14.777	-	-	3.933	-	-	5.333	-	-	1.100	-	-	-	-	-	1.100
Other	-	-	15.282	-	-	10.918	-	-	21.830	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	30.059	-	-	14.851	-	-	27.163	-	-	1.100	-	-	-	-	-	1.100
<i>Subtotal: Hardware Cost</i>	-	-	86.528	-	-	35.974	-	-	33.542	-	-	9.125	-	-	-	-	-	9.125

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment	Item Number / Title [DODIC]: AZ3511 / Radio Frequency CM

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)
Software Cost																		
Non Recurring Cost																		
Mission Data Set (MDS)	-	-	11.824	-	-	0.167	-	-	1.706	-	-	1.890	-	-	-	-	-	1.890
Other Software Sustainment	-	-	8.554	-	-	-	-	-	-	-	-	6.500	-	-	-	-	-	6.500
<i>Subtotal: Non Recurring Cost</i>	-	-	20.378	-	-	0.167	-	-	1.706	-	-	8.390	-	-	-	-	-	8.390
Subtotal: Software Cost	-	-	20.378	-	-	0.167	-	-	1.706	-	-	8.390	-	-	-	-	-	8.390
Logistics Cost																		
Recurring Cost																		
Training	-	-	0.381	-	-	-	-	-	0.015	-	-	0.651	-	-	-	-	-	0.651
Fielding	-	-	1.006	-	-	1.444	-	-	2.693	-	-	3.004	-	-	-	-	-	3.004
<i>Subtotal: Recurring Cost</i>	-	-	1.387	-	-	1.444	-	-	2.708	-	-	3.655	-	-	-	-	-	3.655
Non Recurring Cost																		
Other	-	-	1.980	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depot Stand Up	-	-	-	-	-	-	-	-	-	-	-	4.686	-	-	-	-	-	4.686
<i>Subtotal: Non Recurring Cost</i>	-	-	1.980	-	-	-	-	-	-	-	-	4.686	-	-	-	-	-	4.686
Subtotal: Logistics Cost	-	-	3.367	-	-	1.444	-	-	2.708	-	-	8.341	-	-	-	-	-	8.341
Support - Program Management Cost																		
Contractor Management	-	-	12.285	-	-	2.468	-	-	2.301	-	-	2.180	-	-	-	-	-	2.180
Government Management	-	-	4.631	-	-	3.017	-	-	2.811	-	-	2.670	-	-	-	-	-	2.670
<i>Subtotal: Support - Program Management Cost</i>	-	-	16.916	-	-	5.485	-	-	5.112	-	-	4.850	-	-	-	-	-	4.850
Support - System Engineering Cost																		
System Engineering	-	-	0.559	-	-	11.773	-	-	8.067	-	-	15.647	-	-	-	-	-	15.647
<i>Subtotal: Support - System Engineering Cost</i>	-	-	0.559	-	-	11.773	-	-	8.067	-	-	15.647	-	-	-	-	-	15.647
Gross/Weapon System Cost	8,824.621	-	255.914	1,713.844	-	54.843	-	-	51.135	-	-	46.353	-	-	-	-	-	46.353

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	54.843	51.135	46.353	-	46.353

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Exhibit P-5, Cost Analysis: PB 2020 Army				Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10		P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment		Item Number / Title [DODIC]: AZ3511 / Radio Frequency CM		
ID Code (A=Service Ready, B=Not Service Ready) :			MDAP/MAIS Code:			
Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Total:	Quantity	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	54.843	51.135	46.353	-	46.353

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 3632AZ3504 / Aircraft Survivability Equipment	Item Number / Title [DODIC]: AZ3511 / Radio Frequency CM
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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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
A-Kit Procurement		2017	Prototype Integration Facility / Redstone Arsenal, AL	C / CPFF	Redstone Arsenal, AL	Mar 2017	Mar 2019	56	93.790	N		
B-Kit Procurement		2015	Northrop Grumman / Rolling Meadows, IL	SS / FFP	Patuxent River, MD	Aug 2015	Jan 2017	20	921.600	N		
B-Kit Procurement		2016	Northrop Grumman / Rolling Meadows, IL	SS / FFP	Patuxent River, MD	Sep 2017	Mar 2019	16	974.750	N		
B-Kit Procurement		2017	Northrop Grumman / Rolling Meadows, IL	SS / FFP	Patuxent River, MD	Sep 2017	Sep 2019	31	974.920	N		
B-Kit Procurement		2018	Northrop Grumman / Rolling Meadows, IL	SS / FFP	Patuxent River, MD	Jan 2018	Dec 2019	29	728.379	N		
B-Kit Procurement		2019	Northrop Grumman / Rolling Meadows, IL	SS / FFP	Patuxent River, MD	Jan 2019	Jun 2020	6	729.833	N		

Remarks:
Fiscal Year (FY) 2017, 2018, 2019 and 2020 leverages Navy contract for APR-39D(V)2 B-Kit procurements.

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics

P-1 Line Item Number / Title:
5044AZ3507 / Survivability CM

ID Code (A=Service Ready, B=Not Service Ready): **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>)	3,481.602	5.884	5.853	8.388	-	8.388	8.730	8.890	8.710	8.847	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,481.602	5.884	5.853	8.388	-	8.388	8.730	8.890	8.710	8.847	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,481.602	5.884	5.853	8.388	-	8.388	8.730	8.890	8.710	8.847	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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Advanced Threat Infrared Countermeasure (ATIRCM) is an infrared (IR) countermeasure system that interfaces with the Common Missile Warning System (CMWS) to provide near spherical protection of the host aircraft platform in order to defeat IR threat missiles. The operational concept of ATIRCM is as part of the Suite of Integrated Infrared Countermeasures (SIIRCM). The core components of the SIIRCM concept are: a Missile Warning System (MWS), expendable countermeasures (flares) and a laser based IR countermeasure (IRCM). The CMWS detects, declares, and initiates IRCM against IR-guided Surface-to-Air Missiles (SAM) or Air-to-Air Missiles (AAM). ATIRCM takes a hand-off cue from CMWS and then takes immediate action as a laser based countermeasure against the incoming threat missile.

The A-Kit for ATIRCM includes mounting hardware, wiring harnesses, and other components necessary to install and interface the mission kit on host aircraft. The ATIRCM B-Kit is the mission kit (laser, optical coupler, infrared jam head, and jam head control unit) required to achieve near spherical coverage for an aircraft.

The ATIRCM program is a post-Milestone C, Acquisition Category (ACAT) 1C program of record fielded on CH-47F aircraft.

The approved Army Acquisition Objective (AAO) for ATIRCM is 340 A-Kits and 120 B-Kits.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.884	5.853	8.388	-	8.388	8.730	8.890	8.710	8.847
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.884	5.853	8.388	-	8.388	8.730	8.890	8.710	8.847

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics
P-1 Line Item Number / Title: 5044AZ3507 / Survivability CM

ID Code (A=Service Ready, B=Not Service Ready): **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	AZ3507 / Survivability CM	P-5a			- / 3,481.602	- / 5.884	- / 5.853	- / 8.388	- / -	- / 8.388
P-40	Total Gross/Weapon System Cost				- / 3,481.602	- / 5.884	- / 5.853	- / 8.388	- / -	- / 8.388

*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 2020 Base Procurement dollars in the amount of \$8.388 million supports software concurrency/maintenance, system testing, software engineering/program management, A-Kit/Pod Bay door installations, and support across the CH-47F aircraft fleet.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic responses, and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5044AZ3507 / Survivability CM	Item Number / Title [DODIC]: AZ3507 / Survivability CM

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	3,481.602	5.884	5.853	8.388	-	8.388
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	3,481.602	5.884	5.853	8.388	-	8.388
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	3,481.602	5.884	5.853	8.388	-	8.388

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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																		
Non-Recurring Production	-	-	140.382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-Kit Procurement	541.000	167	90.347	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-Kit/Pod Bay Door Installation ^(†)	178.348	210	37.453	37.089	45	1.669	52.000	57	2.964	33.155	58	1.923	-	-	-	33.155	58	1.923
B-Kit Procurement	3,416.000	120	409.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pod Bay Door Procurement	15.030	167	2.510	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
Engineering Changes	-	-	10.772	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Program Management	-	-	54.370	-	-	0.565	-	-	0.590	-	-	0.740	-	-	-	-	-	0.740
System Test & Evaluation	-	-	90.898	-	-	3.650	-	-	2.294	-	-	3.718	-	-	-	-	-	3.718
Training	-	-	14.518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Data	-	-	0.776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Equipment	-	-	3.501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fielding	-	-	129.918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legacy ATIRCM/CMWS Procurement	-	-	2,496.237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	3,481.602	-	-	5.884	-	-	5.853	-	-	6.381	-	-	-	-	-	6.381
Subtotal: Flyaway Cost	-	-	3,481.602	-	-	5.884	-	-	5.853	-	-	6.381	-	-	-	-	-	6.381
Software Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Army												Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10						P-1 Line Item Number / Title: 5044AZ3507 / Survivability CM						Item Number / Title [DODIC]: AZ3507 / Survivability CM					
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)
Recurring Cost																		
Software Support	-	-	-	-	-	-	-	-	-	-	-	2.007	-	-	-	-	-	2.007
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.007	-	-	-	-	-	2.007
<i>Subtotal: Software Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.007	-	-	-	-	-	2.007
Gross/Weapon System Cost	-	-	3,481.602	-	-	5.884	-	-	5.853	-	-	8.388	-	-	-	-	-	8.388

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	5.884	5.853	8.388	-	8.388
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	5.884	5.853	8.388	-	8.388

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5044AZ3507 / Survivability CM	Item Number / Title [DODIC]: AZ3507 / Survivability CM
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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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
A-Kit/Pod Bay Door Installation		2017	Aviation Field Maint Division / Redstone Arsenal, AL	MIPR	Redstone Arsenal, AL	Oct 2016	Oct 2016	43	36.000	N		
A-Kit/Pod Bay Door Installation		2018	Aviation Field Maint Division / Redstone Arsenal, AL	MIPR	Redstone Arsenal, AL	Oct 2017	Oct 2017	45	37.089	N		
A-Kit/Pod Bay Door Installation		2019	Aviation Field Maint Division / Redstone Arsenal, AL	MIPR	Redstone Arsenal, AL	Oct 2018	Oct 2018	57	52.000	N		
A-Kit/Pod Bay Door Installation		2020	Aviation Field Maint Division / Redstone Arsenal, AL	MIPR	Redstone Arsenal, AL	Oct 2019	Oct 2020	58	33.155	N		

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

Appropriation / Budget Activity / Budget Sub Activity:
 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA
 10: Ground Support Avionics

P-1 Line Item Number / Title:
 5397AZ3517 / CMWS

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0605051A

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>)	736.473	197.467	97.883	13.999	130.219	144.218	140.796	10.040	8.277	8.514	-	1,343.668
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	736.473	197.467	97.883	13.999	130.219	144.218	140.796	10.040	8.277	8.514	-	1,343.668
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	736.473	197.467	97.883	13.999	130.219	144.218	140.796	10.040	8.277	8.514	-	1,343.668

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Common Missile Warning System (CMWS):

Army Procurement Objective (APO) = 1,351 (B-Kits)

The CMWS program is a missile warning system that cues both flare and laser-based countermeasures to defeat incoming Infrared (IR)-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives ultraviolet (UV) missile detection data from Electro-Optic Missile Sensors (EOMS), which detects UV signals, and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently Advanced Threat Infrared Countermeasures (ATIRCM)-equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which is also passed to the aircrew through aural and visual cues. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with on-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding materiel release conditions to achieve a Full Materiel Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

The A-Kit for CMWS includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

JUONS/CIRCM QRC:

APO = 42 (B-Kits)

As a part of Phase 2a of the JUONS (SO-0010) program, the Army has now integrated the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system onto the Apache, Blackhawk, and Chinook platforms. Due to a number of challenges, circumstances, and variables, the Army updated the ATW/CIRCM QRC and LIMWS Directed Requirements (dated 16 November 2018). The updated requirements extend the utilization of ATW DoN LAIRCM on conventional Army aircraft and cancel the need for the ATW/CIRCM QRC system for the conventional Army. (It should be noted that the updated requirement maintains the need for ATW/CIRCM on the Special Operations aircraft.) As a result, the Army will no longer acquire the ATW sensors for use in Phase 3 of the JUONS effort. Instead, the Army will accelerate the procurement of the CIRCM QRC systems for use with the currently fielded Common Missile Warning System (CMWS) in preparation for transition to the Limited Interim Missile Warning System (LIMWS) system when available.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics		P-1 Line Item Number / Title: 5397AZ3517 / CMWS
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0605051A
Line Item MDAP/MAIS Code: N/A		

Limited Interim Missile Warning System (LIMWS) QRC:

APO = 399 (B-Kits)

Phase 4 Limited Interim Missile Warning System (LIMWS) QRC: Phase 4 LIMWS QRC addresses the HQDA Directed Requirement to provide a greater capability than the current program of record (POR), CMWS, to bridge the gap between CMWS and the future POR.

Joint Staff, J-8 Deputy Director for Requirements (DOR) memorandum, April 24, 2015

Phase 2a SOCOM JUONs S0-0010, Joint Rapid Acquisition Cell (JRAC) memorandum, May 29, 2015

Directed Requirement for the Phase 3 ATW/CIRCM QRC to Support Joint Urgent Operational Need (JUON) S0-0010, CIRCM Critical Intelligence Parameters Breach, December 18, 2015

Directed Requirement for the Phase 4 LIMWS QRC, March 26, 2017

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	197.467	97.883	13.999	130.219	144.218	140.796	10.040	8.277	8.514
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	197.467	97.883	13.999	130.219	144.218	140.796	10.040	8.277	8.514

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics
P-1 Line Item Number / Title: 5397AZ3517 / CMWS

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0605051A

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	AZ3517 / CMWS	P-5a, P-21			- / 736.473	- / 197.467	- / 97.883	- / 13.999	- / 130.219	- / 144.218
P-40	Total Gross/Weapon System Cost				- / 736.473	- / 197.467	- / 97.883	- / 13.999	- / 130.219	- / 144.218

*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:
 Common Missile Warning System (CMWS): Fiscal Year (FY) 2020 Base procurement dollars in the amount of \$13.999 million supports CMWS software modifications, software concurrency, contractor support, and system test and evaluation (ST&E) efforts.

JUONS Phase 2a DoN LAIRCM and Phase 3 CIRCM QRC: FY 2020 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$16.750 million supports program management, systems engineering, software, and fielding support.

Phase 3 CIRCM QRC: FY2020 OCO procurement dollars in the amount of \$6.530 million supports installation of QRC A-Kit, ST&E, Program Management and field support.

Phase 4 Limited Interim Missile Warning System (LIMWS) QRC: FY 2020 OCO Procurement dollars in the amount of \$106.939 million fund LIMWS QRC B-Kits (100), A-Kits (185), installation and fielding, and Systems Engineering Program Management (SEPM).

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

All COMPO 1 Active

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5397AZ3517 / CMWS	Item Number / Title [DODIC]: AZ3517 / CMWS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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>)	736.473	197.467	97.883	13.999	130.219	144.218
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	736.473	197.467	97.883	13.999	130.219	144.218
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	736.473	197.467	97.883	13.999	130.219	144.218

(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>)	-	-	-	-	-	-

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																		
CMWS A-Kit Fixed Wing Installation	2,918.667	18	52.536	-	-	1.000	-	-	-	-	-	-	-	-	-	-	-	-
CMWS A-Kit Rotary Wing Installation	657.000	10	6.570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMWS Gen 3 ECU Hardware	261.671	432	113.042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMWS Gen 3 User Data Module (UDM)	-	-	9.607	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMWS Other Recurring Prod (Software/Engineer)	-	-	177.819	-	-	9.889	-	-	7.039	-	-	7.502	-	-	-	-	-	7.502
CMWS Systems Engineering	-	-	25.524	-	-	1.500	-	-	0.749	-	-	0.781	-	-	-	-	-	0.781
CMWS Program Management	-	-	22.307	-	-	1.200	-	-	0.612	-	-	0.639	-	-	-	-	-	0.639
CMWS Systems Test and Evaluation	-	-	63.376	-	-	7.276	-	-	3.697	-	-	4.072	-	-	-	-	-	4.072
JUONS SO-0010 A-Kit Procurement	432.174	69	29.820	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUONS SO-0010 A-Kit Installation	376.406	69	25.972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUONS SO-0010 B-Kit Procurement	2,824.200	45	127.089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5397AZ3517 / CMWS	Item Number / Title [DODIC]: AZ3517 / CMWS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)
JUONS SO-0010 Systems Engineering	-	-	3.184	-	-	2.733	-	-	2.733	-	-	-	-	-	0.921	-	-	0.921
JUONS SO-0010 Program Management	-	-	2.774	-	-	2.237	-	-	2.237	-	-	-	-	-	0.754	-	-	0.754
JUONS SO-0010 Systems Test & Evaluation	-	-	12.538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUONS SO-0010 Fielding	-	-	22.250	-	-	6.500	-	-	6.500	-	-	-	-	-	5.608	-	-	5.608
JUONS SO-0010 Software	-	-	-	-	-	5.000	-	-	5.000	-	-	-	-	-	6.359	-	-	6.359
Phase 3 CIRCM QRC B-Kit Procurement ^(†)	-	-	-	1,015.344	64	64.982	-	-	-	-	-	-	-	-	-	-	-	-
CIRCM QRC Systems Engineering	-	-	-	-	-	6.350	-	-	-	-	-	-	-	-	0.354	-	-	0.354
CIRCM QRC Program Management	-	-	-	-	-	5.195	-	-	1.120	-	-	-	-	-	0.299	-	-	0.299
CIRCM A-Kit Installation	-	-	-	-	-	14.632	66.370	135	8.960	-	-	-	68.350	20	1.367	68.350	20	1.367
CIRCM QRC ST&E	-	-	-	-	-	0.323	-	-	1.120	-	-	-	-	-	4.510	-	-	4.510
Phase 4 LIMWS A-Kit Procurement and Install ^(†)	-	-	-	-	-	-	250.861	36	9.031	-	-	-	72.787	183	13.320	72.787	183	13.320
LIMWS Systems Engineering Program Management	-	-	-	-	-	0.930	-	-	1.721	-	-	-	-	-	1.859	-	-	1.859
Phase 4 LIMWS QRC B-Kit Procurement ^(†)	-	-	-	810.833	36	29.190	459.650	100	45.965	-	-	-	897.000	100	89.700	897.000	100	89.700
LIMWS QRC Additional B-Kit Hardware	-	-	-	-	-	0.780	-	-	-	-	-	-	-	-	2.060	-	-	2.060
CIRCM QRC A-Kit Procurement	-	-	-	378.650	60	22.719	-	-	-	-	-	-	-	-	-	-	-	-
CIRCM Additiona Hardware-I Generators	-	-	-	50.550	20	1.011	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>694.408</i>	-	-	<i>183.447</i>	-	-	<i>96.484</i>	-	-	<i>12.994</i>	-	-	<i>127.111</i>	-	-	<i>140.105</i>
Non Recurring Cost																		
CMWS Other Modifications (5th Sensor and P3I)	-	-	2.690	-	-	2.155	-	-	-	-	-	0.960	-	-	-	-	-	0.960

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Exhibit P-5, Cost Analysis: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10 **P-1 Line Item Number / Title:** 5397AZ3517 / CMWS **Item Number / Title [DODIC]:** AZ3517 / CMWS

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)
CMWS Other Procurement	-	-	3.176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	5.866	-	-	2.155	-	-	-	-	-	0.960	-	-	-	-	-	0.960
<i>Subtotal: Hardware Cost</i>	-	-	700.274	-	-	185.602	-	-	96.484	-	-	13.954	-	-	127.111	-	-	141.065
Logistics Cost																		
Recurring Cost																		
CIRCM ICS-CLS	-	-	-	-	-	8.060	-	-	-	-	-	-	-	-	-	-	-	-
JUONS Fielding and ICS-CLS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.108	-	-	3.108
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	8.060	-	-	-	-	-	0.000	-	-	3.108	-	-	3.108
<i>Subtotal: Logistics Cost</i>	-	-	-	-	-	8.060	-	-	-	-	-	0.000	-	-	3.108	-	-	3.108
Support - Fielding Cost																		
Fielding	-	-	30.084	-	-	1.713	-	-	1.203	-	-	0.045	-	-	-	-	-	0.045
<i>Subtotal: Support - Fielding Cost</i>	-	-	30.084	-	-	1.713	-	-	1.203	-	-	0.045	-	-	-	-	-	0.045
Support - Training Cost																		
Equipment	-	-	6.115	-	-	2.092	-	-	0.196	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Training Cost</i>	-	-	6.115	-	-	2.092	-	-	0.196	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	736.473	-	-	197.467	-	-	97.883	-	-	13.999	-	-	130.219	-	-	144.218

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	197.467	97.883	13.999	130.219	144.218
Total:	Quantity	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	197.467	97.883	13.999	130.219	144.218

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5397AZ3517 / CMWS	Item Number / Title [DODIC]: AZ3517 / CMWS
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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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Phase 3 CIRCM QRC B-Kit Procurement		2018	Northrop Grumman / Rolling Meadows, IL	SS / FFP	AMCOM Contracting Command, RSA	Dec 2017	Dec 2018	64	1,015.344	N		
Phase 4 LIMWS A-Kit Procurement and Install ^(†)		2019	BAE Systems / Nashua, NH	C / FFP	AMCOM Contracting Command, RSA	Nov 2018	May 2019	36	250.861	N		
Phase 4 LIMWS A-Kit Procurement and Install ^(†)	✓	2020	TBD / TBD	C / FFP	AMCOM Contracting Command, RSA	Oct 2019	Apr 2020	133	72.780	N		
Phase 4 LIMWS A-Kit Procurement and Install ^(†)	✓	2020	BAE Systems / Nashua, NH	C / FFP	AMCOM Contracting Command, RSA	Oct 2019	Apr 2020	50	72.780	N		
Phase 4 LIMWS QRC B-Kit Procurement ^(†)		2018	BAE Systems / Nashua, NH	C / FFP	AMCOM Contracting Command, RSA	May 2018	Aug 2019	36	810.833	N		
Phase 4 LIMWS QRC B-Kit Procurement ^(†)		2019	BAE Systems / Nashua, NH	C / FFP	AMCOM Contracting Command, RSA	Apr 2019	Apr 2020	100	459.650	N		
Phase 4 LIMWS QRC B-Kit Procurement ^(†)	✓	2020	BAE Systems / Nashua, NH	C / FFP	AMCOM Contracting Command, RSA	Jan 2020	Mar 2021	100	897.000	N		

^(†) indicates the presence of a P-21

Remarks:

Directed Requirement #3 tasked LIMWS concurrent installation with CIRCM to a designated unit beginning in 4QFY19.

A-kits: Initial Production quantity of 36 A-kits was procured in 1QFY2019 (November). Full Production of A-kits are scheduled for procurement of 183 A-kits in 1QFY2020.

B-kits: Initial Production quantity of 36 B-kits was procured in 2QFY2018 (May). Contract option for Full Production requires a minimum order quantity of 100 B-kits. Additional FY2019 OCO funding of \$62.6M is required to execute the minimum procurement option for 100 B-kits. Total FY2019 OCO requirement is \$85.4M.

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5397AZ3517 / CMWS	Item Number / Title [DODIC]: AZ3517 / CMWS
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Cost Elements <i>(Units in Each)</i>					Fiscal Year 2020													Fiscal Year 2021												BALANCE				
O 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			
Phase 4 LIMWS A-Kit Procurement and Install																																		
	2	2019	ARMY	36	12	24	3	3	3	3	3	3	3	3															0					
✓	1	2020	ARMY	133	0	133	A -	-	-	-	-	-	-	8	8	8	8	8	16	16	16	15	15	7	8			0						
✓	2	2020	ARMY	50	0	50	A -	-	-	-	-	-	10	10	10	10	10											0						
Phase 4 LIMWS QRC B-Kit Procurement																																		
	3	2018	ARMY	36	6	30	3	3	3	3	3	3	3	3	3														0					
	3	2019	ARMY	100	0	100	-	-	-	-	-	-	7	7	8	8	10	10	10	10	10	10	10	10					0					
✓	3	2020	ARMY	100	0	100				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10	30
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10 **P-1 Line Item Number / Title:** 5397AZ3517 / CMWS **Item Number / Title [DODIC]:** AZ3517 / CMWS

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE	
O C C #	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
Phase 4 LIMWS A-Kit Procurement and Install																															
	2	2019	ARMY	36	36	0																							0		
✓	1	2020	ARMY	133	133	0																							0		
✓	2	2020	ARMY	50	50	0																							0		
Phase 4 LIMWS QRC B-Kit Procurement																															
	3	2018	ARMY	36	36	0																							0		
	3	2019	ARMY	100	100	0																							0		
✓	3	2020	ARMY	100	70	30	10	10	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 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10		P-1 Line Item Number / Title: 5397AZ3517 / CMWS
		Item Number / Title [DODIC]: AZ3517 / CMWS

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			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 - TBD	1	10	16	0	0	6	6	0	0	6	6
2	BAE Systems - Nashua, NH	1	10	10	0	0	12	12	0	0	12	12
3	BAE Systems - Nashua, NH	1	10	10	0	0	12	12	0	0	12	12

Remarks:
LIMWS QRC: Competitive Contract was awarded December 2017.

"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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics

P-1 Line Item Number / Title:
5399AZ3537 / Common Infrared Countermeasures (CIRCM)

ID Code (A=Service Ready, B=Not Service Ready): **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>)	108.721	80.677	60.899	168.784	9.310	178.094	247.014	215.744	252.769	332.713	-	1,476.631
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	108.721	80.677	60.899	168.784	9.310	178.094	247.014	215.744	252.769	332.713	-	1,476.631
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	108.721	80.677	60.899	168.784	9.310	178.094	247.014	215.744	252.769	332.713	-	1,476.631

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	1,411.961	1,494.019	1,845.424	2,083.753	-	2,198.691	2,058.450	2,136.079	2,022.152	2,661.704	-	2,062.334

Description:

Army Procurement Objective (APO) = 1,781 (B-Kits only)

The Common Infrared Countermeasure (CIRCM) budget line includes 1) CIRCM (AZ3537), 2) funding to counter emerging technology as identified in Joint Urgent Operational Needs Statement (JUONS) SO-0010 Phase 2a and the Headquarters Department of the Army (HQDA) Directed Requirement for the Common Infrared Countermeasures Quick Reaction Capability (CIRCM QRC), and 3) funding to support HQDA Directed Requirement for the Limited Interim Missile Warning System (LIMWS) Quick Reaction Capability (QRC). The directed change in strategy for the CIRCM QRC enabled the program office to gain efficiencies in A-Kit development, integration & test activities that helped to mitigate the \$20M decrement received in FY19.

CIRCM (AZ3537)

The Common Infrared Countermeasure (CIRCM) is the next generation lightweight, laser-based Infrared Countermeasure (IRCM) component that will interface with both the Army's Common Missile Warning System (CMWS) and future missile warning systems (MWS) to defeat current and emerging missile threats that use multispectral technology for rotary-wing, tilt-rotor and small fixed-wing aircraft across the DoD. CIRCM receives an angular bearing hand-off from the MWS, employs a pointing and tracking system which acquires the handed-over threat and tracks the incoming missile during and after motor burnout. CIRCM jams the missile by using modulated laser energy in the missile seeker band, thus degrading the tracking capability of the missile and causing it to miss the aircraft. CIRCM is utilizing Open Systems Architecture which allows flexibility with software and hardware refreshes to keep pace with future threats.

The CIRCM A-Kit includes mounting hardware, wiring harnesses, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type. The CIRCM B-Kit is the mission kit (laser, pointer tracker, and controller) required to achieve near spherical coverage for an aircraft.

JUONS SO-0010 and CIRCM QRC

As a part of Phase 2a of the JUONS (SO-0010) program, the Army has now integrated the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system onto the Apache, Blackhawk, and Chinook platforms. Due to a number of challenges, circumstances, and variables, the Army updated the ATW/CIRCM QRC and LIMWS Directed Requirements (dated 16 November 2018). The updated requirements extend the utilization of ATW DoN LAIRCM on conventional Army aircraft and cancel the need for the ATW/CIRCM QRC system for the conventional Army. (It should be noted that the updated requirement maintains the need for ATW/CIRCM on the Special Operations aircraft.) As a result, the Army will no longer acquire the ATW sensors for use in Phase 3 of the JUONS effort. Instead, the Army will accelerate the procurement of the CIRCM QRC systems for use with the currently fielded Common Missile Warning System (CMWS) in preparation for transition to the Limited Interim Missile Warning System (LIMWS) system when available.

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics
P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)

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

Line Item MDAP/MAIS Code: N/A

CIRCM MS C was approved September 14, 2018, the Low Rate Initial Production (LRIP) and Engineering Support options were exercised and the program entered the Production & Deployment phase with First Unit Equipped (FUE) planned for third quarter of FY 2020, and a Full Rate Production Decision Review (FRPDR) planned for the third quarter of FY 2020. During the MS C approval process the CSA directed funding increase beginning FY20 to accelerate CIRCM production Initial Operational Test (IOT) field a Combat Aviation Brigade (CAB) per year.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	80.677	60.899	168.784	9.310	178.094	247.014	215.744	252.769	332.713
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	80.677	60.899	168.784	9.310	178.094	247.014	215.744	252.769	332.713

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics
P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)

ID Code (A=Service Ready, B=Not Service Ready): **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	AZ3537 / Common Infrared Countermeasures (CIRCM)	P-5a, P-21			- / 108.721	- / 80.677	- / 60.899	- / 168.784	- / 9.310	- / 178.094
P-40	Total Gross/Weapon System Cost				- / 108.721	- / 80.677	- / 60.899	- / 168.784	- / 9.310	- / 178.094

*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.

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

Justification:
 FY 2020 Base procurement dollars in the amount of \$168.784 million will fund procurement of CIRCM hardware, integration, testing, Systems Engineering Program Management (SEPM), and fielding.
 FY 2020 OCO procurement dollars in the amount of \$9.310 million will fund CIRCM QRC integration, System Test and Evaluation (ST&E), SEPM, and fielding.
 As a result of the Milestone C decision on September 14, 2018, the PB2020 submission supports an approved ACP and APB update.
 In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.
 All COMPO 1 Active

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)	Item Number / Title [DODIC]: AZ3537 / Common Infrared Countermeasures (CIRCM)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	108.721	80.677	60.899	168.784	9.310	178.094
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	108.721	80.677	60.899	168.784	9.310	178.094
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	108.721	80.677	60.899	168.784	9.310	178.094

(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)	1,411.961	1,494.019	1,845.424	2,083.753	-	2,198.691

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																		
CIRCM A-Kit Manufacturing/ Installation	-	-	-	101.458	24	2.435	131.579	57	7.500	90.487	113	10.225	-	-	-	90.487	113	10.225
CIRCM B-Kit Manufacturing ^(†)	-	-	-	1,287.500	24	30.900	461.083	24	11.066	1,226.321	81	99.332	-	-	-	1,226.321	81	99.332
Other Recurring Production	-	-	-	-	-	-	-	-	9.894	-	-	0.008	-	-	-	-	-	0.008
Phase 3 CIRCM QRC B-Kit Manufacturing ^(†)	1,200.169	77	92.413	1,382.033	30	41.461	-	-	-	-	-	-	-	-	-	-	-	-
CIRCM QRC A-Kit Installs	-	-	-	-	-	1.428	-	-	5.400	-	-	-	-	-	-	-	-	-
B-Kit Manufacturing to Support Phase 4 LIMWS QRC ^(†)	-	-	-	-	-	-	1,335.000	9	12.015	-	-	-	-	-	-	-	-	-
CIRCM QRC SEPM	-	-	8.154	-	-	0.551	-	-	2.348	-	-	-	-	-	0.931	-	-	0.931
CIRCM QRC Testing	-	-	-	-	-	-	-	-	3.474	-	-	-	-	-	-	-	-	-
CIRCM QRC Training	-	-	2.718	-	-	-	-	-	-	-	-	-	-	-	2.850	-	-	2.850
CIRCM QRC Fielding	-	-	5.436	-	-	-	-	-	-	-	-	-	-	-	4.529	-	-	4.529
CIRCM QRC Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	1.000
<i>Subtotal: Recurring Cost</i>	-	-	<i>108.721</i>	-	-	<i>76.775</i>	-	-	<i>51.697</i>	-	-	<i>109.565</i>	-	-	<i>9.310</i>	-	-	<i>118.875</i>
<i>Subtotal: Flyaway Cost</i>	-	-	<i>108.721</i>	-	-	<i>76.775</i>	-	-	<i>51.697</i>	-	-	<i>109.565</i>	-	-	<i>9.310</i>	-	-	<i>118.875</i>

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)	Item Number / Title [DODIC]: AZ3537 / Common Infrared Countermeasures (CIRCM)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)
Software Cost																		
Recurring Cost																		
Jam Code Updates/ Software Support	-	-	-	-	-	3.902	-	-	-	-	-	6.008	-	-	-	-	-	6.008
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	3.902	-	-	-	-	-	6.008	-	-	-	-	-	6.008
<i>Subtotal: Software Cost</i>	-	-	-	-	-	3.902	-	-	-	-	-	6.008	-	-	-	-	-	6.008
Support - Data Cost																		
Technical Publications	-	-	-	-	-	-	-	-	0.463	-	-	0.162	-	-	-	-	-	0.162
<i>Subtotal: Support - Data Cost</i>	-	-	-	-	-	-	-	-	0.463	-	-	0.162	-	-	-	-	-	0.162
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	-	-	-	-	-	-	1.972	-	-	-	-	-	1.972
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.972	-	-	-	-	-	1.972
Support - Fielding Cost																		
Fielding	-	-	-	-	-	-	-	-	5.320	-	-	19.627	-	-	-	-	-	19.627
<i>Subtotal: Support - Fielding Cost</i>	-	-	-	-	-	-	-	-	5.320	-	-	19.627	-	-	-	-	-	19.627
Support - Peculiar Support Equipment Cost																		
Test and Measurement Equipment	-	-	-	-	-	-	-	-	-	-	-	0.210	-	-	-	-	-	0.210
<i>Subtotal: Support - Peculiar Support Equipment Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.210	-	-	-	-	-	0.210
Support - System Engineering Cost																		
System Engineering	-	-	-	-	-	-	-	-	3.419	-	-	11.769	-	-	-	-	-	11.769
<i>Subtotal: Support - System Engineering Cost</i>	-	-	-	-	-	-	-	-	3.419	-	-	11.769	-	-	-	-	-	11.769
Support - System Test and Evaluation Cost																		
Test and Evaluation Support	-	-	-	-	-	-	-	-	-	-	-	2.779	-	-	-	-	-	2.779
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.779	-	-	-	-	-	2.779
Support - Training Cost																		
Services	-	-	-	-	-	-	-	-	-	-	-	16.692	-	-	-	-	-	16.692

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10	P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)	Item Number / Title [DODIC]: AZ3537 / Common Infrared Countermeasures (CIRCM)
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)
<i>Subtotal: Support - Training Cost</i>	-	-	-	-	-	-	-	-	-	-	-	16.692	-	-	-	-	-	16.692
Gross/Weapon System Cost	1,411.961	-	108.721	1,494.019	-	80.677	1,845.424	-	60.899	2,083.753	-	168.784	-	-	9.310	2,198.691	-	178.094

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	80.677	60.899	168.784	9.310	178.094
Total:	Quantity	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	80.677	60.899	168.784	9.310	178.094

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10			P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)				Item Number / Title [DODIC]: AZ3537 / Common Infrared Countermeasures (CIRCM)				

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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
CIRCM B-Kit Manufacturing ^(†)		2018	Northrop Grumman Systems Corp / Rolling Meadows	C / FPIF	HQ ACC, Redstone Arsenal, AL	Jun 2019	May 2020	24	1,287.500	N		
CIRCM B-Kit Manufacturing ^(†)		2019	Northrop Grumman Systems Corp / Rolling Meadows	Option / FFP	HQ ACC, Redstone Arsenal, AL	Dec 2018	Jun 2019	24	461.083	N		
CIRCM B-Kit Manufacturing ^(†)		2020	Northrop Grumman Systems Corp / Rolling Meadows	C / FPIF	HQ ACC, Redstone Arsenal, AL	Feb 2020	Jan 2021	81	1,226.321	N		
Phase 3 CIRCM QRC B-Kit Manufacturing		2017	Northrop Grumman Systems Corp / Rolling Meadows	C / FFP	HQ ACC, Redstone Arsenal, AL	Sep 2018	Nov 2019	77	1,200.170	N		
Phase 3 CIRCM QRC B-Kit Manufacturing		2018	Northrop Grumman Systems Corp / Rolling Meadows	C / FFP	HQ ACC, Redstone Arsenal, AL	Jun 2019	Sep 2020	30	1,382.033	N		
B-Kit Manufacturing to Support Phase 4 LIMWS QRC		2019	Northrop Grumman Systems Corp / Rolling Meadows	C / FPIF	HQ ACC, Redstone Arsenal, AL	Jun 2019	Aug 2020	9	1,335.000	N		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 10		P-1 Line Item Number / Title: 5399AZ3537 / Common Infrared Countermeasures (CIRCM)
		Item Number / Title [DODIC]: AZ3537 / Common Infrared Countermeasures (CIRCM)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			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 Systems Corp - Rolling Meadows	5	15	25	0	10	0	10	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).

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support

P-1 Line Item Number / Title:
0832AZ3000 / Avionics Support Equipment

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 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>)	532.169	7.038	1.778	1.777	-	1.777	1.791	1.840	-	-	-	546.393
Less PY Advance Procurement (<i>\$ in Millions</i>)	5.036	-	-	-	-	-	-	-	-	-	-	5.036
Net Procurement (P-1) (<i>\$ in Millions</i>)	527.133	7.038	1.778	1.777	-	1.777	1.791	1.840	-	-	-	541.357
Plus CY Advance Procurement (<i>\$ in Millions</i>)	5.036	-	-	-	-	-	-	-	-	-	-	5.036
Total Obligation Authority (<i>\$ in Millions</i>)	532.169	7.038	1.778	1.777	-	1.777	1.791	1.840	-	-	-	546.393

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	771.259	8.809	23.395	25.754	-	25.754	26.338	27.059	-	-	-	308.697

Description:

The Aviator's Night Vision Imaging System (ANVIS), supports the Army's objectives by permitting superior tactical mobility of rotary wing aircraft during darkness and low light conditions. ANVIS also supports Fixed Wing Lift permitting loading/unloading and flight during darkness and low light conditions. ANVIS is a binocular, helmet-mounted system for Aviation crew members. ANVIS is a night vision goggle that significantly expands the input dynamic range to support operations in conditions that vary from below starlight illumination levels through strong urban lighting situations. The increased capability of ANVIS yields enhanced mission performance and improved safety of flight, compared to what is now possible using previous ANVIS systems. ANVIS enhances the survivability, lethality, and tactical mobility for aviators.

The Army Acquisition Objective (AAO) for this program is 16,902.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	7.038	1.778	1.777	-	1.777	1.791	1.840	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	7.038	1.778	1.777	-	1.777	1.791	1.840	-	-

Justification:

FY 2020 Base procurement dollars in the amount of \$1.777 million supports program management and fielding activities.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense mission, domestic emergency responses, and providing military support of civil authorities.

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support
P-1 Line Item Number / Title: 5212AZ3100 / Common Ground Equipment

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0603801A, 0605830A

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>)	1,232.023	47.404	34.818	18.624	-	18.624	18.825	16.121	16.455	17.429	-	1,401.699
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,232.023	47.404	34.818	18.624	-	18.624	18.825	16.121	16.455	17.429	-	1,401.699
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,232.023	47.404	34.818	18.624	-	18.624	18.825	16.121	16.455	17.429	-	1,401.699

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Aviation Ground Support Equipment (AGSE) acquires, fields, and modernizes aviation equipment within cost, schedule, and performance parameters, allowing Army Aviation Soldiers to carry out peacetime and wartime missions. AGSE provides life cycle systems management for Aviation Ground Power Unit (AGPU), Aviation Light Utility Mobile Maintenance Cart (ALUMMC), Tool Set, Aviation Unit Maintenance (formerly Aviation Unit Maintenance Tool Sets), Modernized Maintenance Stands (MMS), Common Aviation Tool System (CATS), Flexible Engine Diagnostic System (FEDS), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II) Type 2 (Expeditionary Variant), Unit Maintenance Aerial Recovery Kit (UMARK), Pitot Static Test Set (PSTS) and Non-Destructive Test Equipment (NDTE). AGSE is critical to achieving operational readiness requirements of Army Aviation Units.

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	21.161	15.645	1.307	-	1.307	0.733	0.209	16.455	17.429
ANG									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	25.023	17.946	10.455	-	10.455	10.269	13.400	-	-
AR									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	1.220	1.227	6.862	-	6.862	7.823	2.512	-	-
Total: Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	47.404	34.818	18.624	-	18.624	18.825	16.121	16.455	17.429

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity:
 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support **P-1 Line Item Number / Title:**
 5212AZ3100 / Common Ground Equipment

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0603801A, 0605830A

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	AZ3520 / AVIATION GROUND SUPPORT EQUIPMENT				- / 1,232.023	- / 47.404	- / 34.818	- / 18.624	- / -	- / 18.624
P-40	Total Gross/Weapon System Cost				- / 1,232.023	- / 47.404	- / 34.818	- / 18.624	- / -	- / 18.624

*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 2020 Base procurement dollars in the amount of \$2.898 million procures Aviation Ground Power Units.

FY 2020 Base procurement dollars in the amount of \$0.250 million funds fielding of FEDS.

FY 2020 Base procurement dollars in the amount of \$6.259 million procures and fields the Self-propelled Crane Aircraft Maintenance and Positioning Increment II, Type 2 (Expeditionary Variant).

FY 2020 Base procurement dollars in the amount of \$9.217 million procures and fields the Pitot Static Test Set.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30	P-1 Line Item Number / Title: 5212AZ3100 / Common Ground Equipment	Item Number / Title [DODIC]: AZ3520 / AVIATION GROUND SUPPORT EQUIPMENT

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	1,232.023	47.404	34.818	18.624	-	18.624
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,232.023	47.404	34.818	18.624	-	18.624
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,232.023	47.404	34.818	18.624	-	18.624

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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																		
Aviation Ground Power Unit	124.483	8,246	1,026.484	-	-	-	-	-	-	966.000	3	2.898	-	-	-	966.000	3	2.898
Avn Light Utility Mobile Maint	43.568	1,100	47.925	-	-	1.949	-	-	-	-	-	-	-	-	-	-	-	-
Modernized Maintenance Stands	-	-	5.827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Common Aviation Tool System	2.543	18,757	47.704	7.685	1,132	8.699	-	-	0.150	-	-	-	-	-	-	-	-	-
Flexible Engine Diagnostics Sys	33,592.500	2	67.185	5,547.333	3	16.642	-	-	0.867	-	-	0.250	-	-	-	-	-	0.250
SCAMP II Expeditionary Type 2	-	-	-	-	-	2.110	193.188	96	18.546	447.071	14	6.259	-	-	-	447.071	14	6.259
Unit Maint Aerial Recovery Kit	-	-	14.584	-	-	0.030	-	-	-	-	-	-	-	-	-	-	-	-
Non-Destructive Test Equipment	-	-	18.131	218.452	62	13.544	-	-	10.359	-	-	-	-	-	-	-	-	-
Tool Set, Aviation Unit Maintenance	-	-	1.879	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pitot Static Test Set	-	-	-	-	-	4.430	-	-	4.896	214.349	43	9.217	-	-	-	214.349	43	9.217
Subtotal: Recurring Cost	-	-	1,229.717	-	-	47.404	-	-	34.818	-	-	18.624	-	-	-	-	-	18.624
Subtotal: Flyaway Cost	-	-	1,229.717	-	-	47.404	-	-	34.818	-	-	18.624	-	-	-	-	-	18.624

Support - Program Management Cost

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30	P-1 Line Item Number / Title: 5212AZ3100 / Common Ground Equipment	Item Number / Title [DODIC]: AZ3520 / AVIATION GROUND SUPPORT EQUIPMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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)
Government Management	-	-	2.307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Program Management Cost</i>	-	-	2.307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	1,232.023	-	-	47.404	-	-	34.818	-	-	18.624	-	-	-	-	-	18.624

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	21.161	15.645	1.307	-	1.307
ANG	Quantity	-	-	-	-	-
	Total Obligation Authority	25.023	17.946	10.455	-	10.455
AR	Quantity	-	-	-	-	-
	Total Obligation Authority	1.220	1.227	6.862	-	6.862
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	47.404	34.818	18.624	-	18.624

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support

P-1 Line Item Number / Title:
6380AZ3110 / Aircrew Integrated Systems

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0603827A, 0604601A

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>)	810.785	53.366	27.243	48.255	-	48.255	48.303	52.814	24.698	24.834	-	1,090.298
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	810.785	53.366	27.243	48.255	-	48.255	48.303	52.814	24.698	24.834	-	1,090.298
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	810.785	53.366	27.243	48.255	-	48.255	48.303	52.814	24.698	24.834	-	1,090.298

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	1,058.466	20.781	39.887	25.264	-	25.264	25.290	26.017	38.173	38.147	-	97.653

Description:

Aircrew Integrated Systems funds Air Warrior and Air Soldier System Aviation Life Support Equipment efforts. The Air Warrior (AW) is the legacy Aviation Life Support Equipment system that provides Army rotary wing aircrews with protective mission and survival equipment. The AW consists of Clothing and Individual Equipment and mission electronics integrated with the aircraft that enable the crew member to successfully perform the mission as well as protect, sustain, and assist in the safe return to friendly forces in the event of a downed aircraft scenario. The Air Soldier System (Air SS) is the phased replacement of the AW that addresses AW capability gaps, including crew station compatibility challenges due to the bulk of aircrew-worn protective equipment; lack of modern Situational Awareness tools available to the aviator; and soldier load. Air SS integrates with the aircraft platform and consists of modernized mission electronics, flight helmets, helmet-mounted displays and symbology, and provides improved protective clothing and individual survival equipment. The Air SS reduces soldier load by reducing the bulk and weight of the protective equipment worn by the crewmember, and enhances aircrew Situational Awareness and safety with a Computer Display System and improved helmet mounted displays/Electronic Flight Bag (EFB) that reduce cockpit workload and provide enhanced flight symbology for UH-60 and CH-47 crewmembers.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	33.598	16.121	28.442	-	28.442	29.292	32.796	24.698	24.834
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	19.768	11.122	11.767	-	11.767	10.965	10.997	-	-
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	-	8.046	-	8.046	8.046	9.021	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	53.366	27.243	48.255	-	48.255	48.303	52.814	24.698	24.834

UNCLASSIFIED

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support **P-1 Line Item Number / Title:** 6380AZ3110 / Aircrew Integrated Systems

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0603827A, 0604601A

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	AZ3110 / Aircrew Integrated Systems	P-5a, P-21			- / 810.785	- / 53.366	- / 27.243	- / 48.255	- / -	- / 48.255
P-40	Total Gross/Weapon System Cost				- / 810.785	- / 53.366	- / 27.243	- / 48.255	- / -	- / 48.255

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

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

Justification:
 FY2020 Base procurement dollars in the amount of \$48.255 million supports Engineering Changes to Air Warrior components that support Air Soldier System requirements, and production and fielding of Air SS capability. Air SS provides improved flight helmets; a Computer and Display System for UH-60L aviators that provides digital moving map/situational awareness and Blue Force Tracking capability; improved lightweight body armor; improved environmental protective clothing and personal survival equipment; a day/night helmet-mounted display for UH-60 and CH-47 aviators; and the Electronic Flight Bag (EFB), a digital replacement for paper DoD Flight Information Publications and aircraft publications. These capabilities reduce Soldier load and enhance their Situational Awareness, Safety, and Survivability. Funds also procure Air Soldier platform-mounted components necessary for airframe interface with the Air Soldier; and installation of airframe integration kits.

Funding procures equipment and materiel to support a balanced investment strategy in support of the Army Acquisition Objective.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30	P-1 Line Item Number / Title: 6380AZ3110 / Aircrew Integrated Systems	Item Number / Title [DODIC]: AZ3110 / Aircrew Integrated Systems

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	810.785	53.366	27.243	48.255	-	48.255
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	810.785	53.366	27.243	48.255	-	48.255
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	810.785	53.366	27.243	48.255	-	48.255

(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)	1,058.466	20.781	39.887	25.264	-	25.264

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																		
Air Warrior ECPs Supporting Air SS Rqmts	-	-	16.855	-	-	1.343	-	-	-	-	-	-	-	-	-	-	-	-
Air SS Soldier Kits	6.456	4,568	29.492	1.934	3,252	6.289	4.300	700	3.010	4.300	1,750	7.525	-	-	-	4.300	1,750	7.525
Air SS Airframe Kits ^(†)	75.296	658	49.545	218.000	108	23.544	218.000	78	17.004	218.000	149	32.482	-	-	-	218.000	149	32.482
Airframe Kit Install	-	-	8.961	-	-	3.845	-	-	0.989	-	-	1.364	-	-	-	-	-	1.364
Manual	-	-	14.321	-	-	0.379	-	-	-	-	-	-	-	-	-	-	-	-
New Equipment Training	-	-	3.533	-	-	1.873	-	-	0.357	-	-	0.401	-	-	-	-	-	0.401
Initial Spares	-	-	10.365	-	-	1.880	-	-	0.804	-	-	1.624	-	-	-	-	-	1.624
Support Equipment	-	-	8.907	-	-	0.738	-	-	0.149	-	-	0.200	-	-	-	-	-	0.200
Systems Test and Evaluation	-	-	15.959	-	-	0.433	-	-	0.298	-	-	0.299	-	-	-	-	-	0.299
Nonrecurring Engineering (NRE)	-	-	33.453	-	-	0.738	-	-	0.362	-	-	0.362	-	-	-	-	-	0.362
Engineering Changes	-	-	8.884	-	-	3.176	-	-	1.177	-	-	0.800	-	-	-	-	-	0.800
Systems Integration Engineering	-	-	7.004	-	-	0.528	-	-	0.383	-	-	0.335	-	-	-	-	-	0.335
Program Management & Matrix Support	-	-	32.413	-	-	5.987	-	-	2.246	-	-	2.268	-	-	-	-	-	2.268
Total Package Fielding	-	-	2.326	-	-	0.723	-	-	0.109	-	-	0.240	-	-	-	-	-	0.240

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30		P-1 Line Item Number / Title: 6380AZ3110 / Aircrew Integrated Systems
		Item Number / Title [DODIC]: AZ3110 / Aircrew Integrated Systems
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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)
Contract Logistics Support	-	-	4.066	-	-	1.890	-	-	0.355	-	-	0.355	-	-	-	-	-	0.355
<i>Subtotal: Recurring Cost</i>	-	-	246.083	-	-	53.366	-	-	27.243	-	-	48.255	-	-	-	-	-	48.255
Non Recurring Cost																		
Legacy Air Warrior Costs	-	-	564.701	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	564.701	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Flyaway Cost</i>	-	-	810.784	-	-	53.366	-	-	27.243	-	-	48.255	-	-	-	-	-	48.255
Gross/Weapon System Cost	1,058.466	-	810.785	20.781	-	53.366	39.887	-	27.243	25.264	-	48.255	-	-	-	25.264	-	48.255

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	33.598	16.121	28.442	-	28.442
ANG	Quantity	-	-	-	-	-
	Total Obligation Authority	19.768	11.122	11.767	-	11.767
AR	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	8.046	-	8.046
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	53.366	27.243	48.255	-	48.255

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

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Exhibit P-5a, Procurement History and Planning: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30	P-1 Line Item Number / Title: 6380AZ3110 / Aircrew Integrated Systems	Item Number / Title [DODIC]: AZ3110 / Aircrew Integrated Systems
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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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Air SS Airframe Kits ^(†)		2016	Various / Various	C / FFP	Redstone Arsenal, AL	Mar 2016	Sep 2016	217	62.728	Y		
Air SS Airframe Kits ^(†)		2017	Various / Various	C / FFP	Redstone Arsenal, AL	Jan 2017	Jul 2017	137	117.277	Y		
Air SS Airframe Kits ^(†)		2018	Various / Various	C / FFP	Redstone Arsenal, AL	Jan 2018	Jun 2018	108	218.000	Y		
Air SS Airframe Kits ^(†)		2019	Various / Various	C / FFP	Redstone Arsenal, AL	Jan 2019	Jun 2019	78	218.000	Y		
Air SS Airframe Kits ^(†)		2020	Various / Various	C / FFP	Redstone Arsenal, AL	Jan 2020	Jun 2020	149	218.000	Y		

^(†) indicates the presence of a P-21

Remarks:

Unit Cost changes across the years reflect the different mix of subsystem components procured each year. The Air SS Airframe Kit subsystem component is a primary cost driver of the program and fluctuations in quantities in any given fiscal year can substantially change the overall program Unit Cost. The Air SS Soldier Kit subsystem component makes up the other bulk of hardware procured under this program that can also shift the overall program Unit Cost based on quantities bought. The subsystem component quantities for each fiscal year are shown on the P-5 cost elements.

Unit costs for Soldier Kit and Airframe Kit subsystem component cost elements are stable between FY19 and FY20 because the capabilities are the same.

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Exhibit P-21, Production Schedule: PB 2020 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30 **P-1 Line Item Number / Title:** 6380AZ3110 / Aircrew Integrated Systems **Item Number / Title [DODIC]:** AZ3110 / Aircrew Integrated Systems

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2018												Fiscal Year 2019												BALANCE	
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
Air SS Airframe Kits																															
Prior Years Deliveries: 304																															
1		2016	ARMY	217	217	0																							0		
1		2017	ARMY	137	36	101	12	12	12	12	12	12	12	12	5														0		
1		2018	ARMY	108	0	108				A	-	-	-	-	8	8	8	8	8	8	10	10	10	10	10	10				0	
1		2019	ARMY	78	0	78																							54		
1		2020	ARMY	149	0	149																							149		
							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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30 **P-1 Line Item Number / Title:** 6380AZ3110 / Aircrew Integrated Systems **Item Number / Title [DODIC]:** AZ3110 / Aircrew Integrated Systems

Cost Elements <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
Air SS Airframe Kits																															
Prior Years Deliveries: 304																															
1		2016	ARMY	217	217	0																							0		
1		2017	ARMY	137	137	0																							0		
1		2018	ARMY	108	108	0																							0		
1		2019	ARMY	78	24	54	6	6	7	7	7	7	7																0		
1		2020	ARMY	149	0	149					A	-	-	-	-	-	12	12	12	12	12	12	12	13	13	13	13	13	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 Army	Date: March 2019
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Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30	P-1 Line Item Number / Title: 6380AZ3110 / Aircrew Integrated Systems	Item Number / Title [DODIC]: AZ3110 / Aircrew Integrated Systems
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			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	Various - Various	8	100	500	6	19	6	25	5	3	6	9

Remarks:
Air SS procurement utilizes Indefinite Delivery Indefinite Quantity Contract vehicles and therefore does not have Minimum Sustaining Rates; therefore, Monthly Production Rates are shown.

"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 Army **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity:
 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support

P-1 Line Item Number / Title:
 6818AA0050 / Air Traffic Control

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604633A

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>)	1,525.161	78.790	63.872	32.738	-	32.738	37.332	34.044	34.219	33.988	-	1,840.144
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,525.161	78.790	63.872	32.738	-	32.738	37.332	34.044	34.219	33.988	-	1,840.144
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,525.161	78.790	63.872	32.738	-	32.738	37.332	34.044	34.219	33.988	-	1,840.144

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funds described herein support the acquisition of modernized tactical and fixed base Air Traffic Control (ATC) systems that will enable safety of aircraft operations. In accordance with Federal Aviation Administration (FAA) mandates for systems operating in the National Airspace System (NAS), ATC systems are required to maintain compliance with civil, military, domestic and international air traffic control and combat identification requirements.

Efforts funded include the Tactical Airspace Integration System (TAIS), Air Traffic Navigation Integration and Coordination System (ATNAVICS), the Mobile Tower System (MOTS), the Tactical Terminal Control System (TTCS), and Fixed Base systems, such as the DoD Advanced Automation System (DAAS), the Digital Airport Surveillance Radar (DASR), and other navigational control aids to include the Army Airfield Automation System (AAAS), National Airspace System (NAS) Voice Switch, Doppler VHF Omnidirectional Range (DVOR) system, NAS Voice Recorder (NVR) and Precision Approach Radar (PAR).

TAIS is the Army's program of record for Airspace Control (AC) and enroute Air Traffic Services (ATS). Continued compatibility and interoperability with the Army Mission Command Information System (MCIS), requires development, testing and integration of new web-based services for AC into common MCIS hardware, while meeting the Common Operating Environment (COE) standards. Includes development and testing of improvements to the air picture to include fusion of Blue Force Tracker (BFT), radar, Identify Friend or Foe (IFF) and additional sensor feeds. TAIS develops software and hardware for ATS and AC missions to operate effectively in a dynamic net-centric interconnected environment to further enhance airspace integration and dynamic management capabilities for aviation gateway to mission command.

ATNAVICS is a PAR system that provides ATS at Army terminal airfields and landing sites at Division, Corps, and Echelons Above Corps to include services for Joint and Allied aircraft. ATNAVICS will integrate interrogator capabilities required to control aircraft both Outside of the Continental United States and within the Continental United States. ATNAVICS will network its radar picture and interrogator data to aviation and joint network nodes through TAIS.

TTCS is a mobile ATC communications system that provides initial ATS at remote landing sites and drop zones. It enables secure ground-to-air and ground-to-ground communications between Army aircraft, other services, Allied aircraft, and ground stations. TTCS also provides aircraft separation and ground control capabilities, a meteorological measuring system for basic weather information, Blue Force Tracker which provides near real time situational awareness and precision location capability.

MOTS provides ATC and aircraft separation for both air and ground operations at tactical or remote landing sites. It replaces the 1970's era mobile tower system. MOTS capabilities include weather information, secure and anti-jam communications across all required frequency bands and ranges and precision location.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support		P-1 Line Item Number / Title: 6818AA0050 / Air Traffic Control

ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604633A
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Line Item MDAP/MAIS Code: N/A

Fixed Base ATC requirements (DAAS, DASR, AAAS, DVOR, NVR, NAS Voice Switch) will be met through a vast array of new technology solutions and pre-planned product improvement (P3I) of these systems resulting in highly reliable and safe ATC systems in accordance with the Joint DoD/FAA program to modernize the NAS and the FAA Next Gen program.

Precision Approach Radar (PAR) 2020 provides precision approach capabilities at Army terminal airfields and landing sites at Division, Corps, and Echelons Above Corps to include services for Joint and Allied aircraft.

This exhibit is for a budget line that procures multiple items and does not have a single Army Acquisition Objective.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	40.971	31.297	26.098	-	26.098	23.610	34.044	34.219	33.988
ANG	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	35.455	28.104	5.892	-	5.892	13.722	-	-	-
AR	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.364	4.471	0.748	-	0.748	-	-	-	-
Total:	Quantity	-	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	78.790	63.872	32.738	-	32.738	37.332	34.044	34.219	33.988

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

Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support **P-1 Line Item Number / Title:** 6818AA0050 / Air Traffic Control

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604633A

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	AA0050 / Air Traffic Control				- / 1,525.161	- / 78.790	- / 63.872	- / 32.738	- / -	- / 32.738
P-40	Total Gross/Weapon System Cost				- / 1,525.161	- / 78.790	- / 63.872	- / 32.738	- / -	- / 32.738

*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 2020 Base procurement dollars in the amount of \$4.188 million procures DAAS Generation 5 upgraded systems, system site preparation and installation.
 FY 2020 Base procurement dollars in the amount of \$0.918 million procures long lead items for the Digital Airport Surveillance Radar, Wind Turbine Mitigation Program.
 FY 2020 Base procurement dollars in the amount of \$13.086 million procures Interim Voice Switch Replacement systems and site surveys for future systems; provides for Army Airfield Automation System software upgrades and Information Assurance and Vulnerability Assessment; procures National Airspace System Voice Recorder systems and site preparation and installation; and procures Doppler VHF Omni-Directional Range/Distance-Measuring Equipment systems and site surveys and installation.
 FY 2020 Base procurement dollars in the amount of \$12.564 million provides for the continuation of ongoing TAIS COE efforts, support of Joint Interoperability Testing, support of network integration event testing, incorporation of emerging FAA requirements, real time retrieval of Aviation Mission Planning System mission data to mitigate risk by improving airspace situational awareness, and providing an improved soldier interface that is common with other ATC systems.
 FY 2020 Base procurement dollars in the amount of \$1.982 million provides for ATNAVICS program management, logistics and technical support.
 In accordance with section 1815 of the FY 2008 National Defense Authorization Act P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30	P-1 Line Item Number / Title: 6818AA0050 / Air Traffic Control	Item Number / Title [DODIC]: AA0050 / Air Traffic Control

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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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)	1,525.161	78.790	63.872	32.738	-	32.738
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,525.161	78.790	63.872	32.738	-	32.738
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,525.161	78.790	63.872	32.738	-	32.738

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 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																		
Fixed Base Precision Approach Radar (FBPAR)	-	-	89.918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DoD Advanced Automation System (DAAS)	-	-	112.693	-	-	0.050	-	-	0.767	-	-	4.188	-	-	-	-	-	4.188
Digital Airport Surveillance Radar(DASR)	-	-	84.982	-	-	0.345	-	-	0.516	-	-	0.918	-	-	-	-	-	0.918
Tactical Airspace Integration Sys (TAIS)	-	-	407.990	-	-	21.060	-	-	21.801	-	-	12.564	-	-	-	-	-	12.564
Air Traffic Navigation and Integration	-	-	419.094	-	-	22.364	-	-	6.098	-	-	1.982	-	-	-	-	-	1.982
Navigational Control (AAAS, DVOR, NVS, NVR)	-	-	66.133	-	-	20.828	-	-	21.131	-	-	13.086	-	-	-	-	-	13.086
Tactical Terminal Control System (TTCS)	-	-	82.330	-	-	4.014	-	-	4.694	-	-	-	-	-	-	-	-	-
Mobile Tower System (MOTS)	-	-	210.498	-	-	5.046	-	-	3.702	-	-	-	-	-	-	-	-	-
ATC Common Simulator (ACS)	-	-	51.523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Precision Approach Radar (PAR) 2020	-	-	-	-	-	5.083	-	-	5.163	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Army												Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 2031A / 04 / 30						P-1 Line Item Number / Title: 6818AA0050 / Air Traffic Control						Item Number / Title [DODIC]: AA0050 / Air Traffic Control					
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)
<i>Subtotal: Recurring Cost</i>	-	-	1,525.161	-	-	78.790	-	-	63.872	-	-	32.738	-	-	-	-	-	32.738
<i>Subtotal: Flyaway Cost</i>	-	-	1,525.161	-	-	78.790	-	-	63.872	-	-	32.738	-	-	-	-	-	32.738
Gross/Weapon System Cost	-	-	1,525.161	-	-	78.790	-	-	63.872	-	-	32.738	-	-	-	-	-	32.738

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	40.971	31.297	26.098	-	26.098
ANG	Quantity	-	-	-	-	-
	Total Obligation Authority	35.455	28.104	5.892	-	5.892
AR	Quantity	-	-	-	-	-
	Total Obligation Authority	2.364	4.471	0.748	-	0.748
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	78.790	63.872	32.738	-	32.738

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support

P-1 Line Item Number / Title:
8132AZ3300 / Industrial Facilities

ID Code (A=Service Ready, B=Not Service Ready): **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>)	187.326	1.397	1.417	-	-	-	-	-	-	-	-	190.140
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	187.326	1.397	1.417	-	-	-	-	-	-	-	-	190.140
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	187.326	1.397	1.417	-	-	-	-	-	-	-	-	190.140

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides funding to the Army Test and Evaluation Command (ATEC) to establish, modernize, expand or replace test facilities used in production testing of Aircraft and Aircraft components. It sustains Army production test capabilities through upgrade and replacement of instrumentation and equipment that is technologically and/or economically obsolete. Modernization of test instrumentation and equipment provides increased automation and efficiencies, improved data quality and quantity and cost avoidances to Army Program Managers. Programmed funding will be used to upgrade or replace production test instrumentation and equipment at the Redstone Test Center (RTC), Huntsville, AL and Yuma Test Center (YTC), Yuma Proving Ground, AZ.

Secondary Distribution		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.397	1.417	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.397	1.417	-	-	-	-	-	-	-

Justification:

FY 2019 Base procurement dollars in the amount of \$1.417 million support the following: At Redstone Test Center (RTC), procures new data acquisition equipment used to collect vital airspeed data. The new airspeed calibration and measurement system uses advanced laser partial Doppler shift technology to make non-intrusive air data measurements with improved accuracy and repeatability to support testing on any rotary or fixed wing aircraft. At Yuma Test Center (YTC), replace and upgrade production-based support aircraft instrumentation hardware for the time-stamping of on-board recording and telemetry. Replacements and upgrades for production-based support aircraft instrumentation and equipment will support YTC mission by providing reliable telemetry data along with relevant environmental data and time-stamps. The majority of the instrumentation being upgraded or replaced is obsolete and has met or exceeded its economic life. This instrumentation is required to ensure complete and accurate test data are collected and safety and environmental hazards are minimized. Benefits of this project include increased test efficiencies and decreased costs and risks to Army Program Managers.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support		P-1 Line Item Number / Title: 8132AZ3300 / Industrial Facilities
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support

P-1 Line Item Number / Title:
9154A50100 / Launcher, 2.75 Rocket

ID Code (A=Service Ready, B=Not Service Ready): **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>)	94.320	1.911	1.901	2.201	-	2.201	2.348	2.492	2.541	3.112	-	110.826
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	94.320	1.911	1.901	2.201	-	2.201	2.348	2.492	2.541	3.112	-	110.826
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	94.320	1.911	1.901	2.201	-	2.201	2.348	2.492	2.541	3.112	-	110.826

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	460.098	15.411	15.582	15.610	-	15.610	15.758	15.974	15.981	15.959	-	88.590

Description:

The Launchers and Test Sets Product Office is the executive procurement agent for all services and Foreign Military customers for all variants of 2.75 Inch Hydra-70 Rocket Launchers. The M261 19-tube analog launcher and the M260 7-tube analog launcher are used to fire 2.75 Inch Hydra-70 Guided / Unguided Rockets from the following platforms: AH-64 Apache, H-60 Blackhawk, and Special Operations aircraft. The analog launchers are non-repairable, yet durable enough to withstand at least 16 rocket firings per tube before being discarded. The empty weight of the M260 analog launcher is approximately 35 pounds and the empty weight of the M261 analog launcher is approximately 82 pounds. The analog launcher permits fuze-timing selections from the cockpit and will launch guided / unguided rockets using either the MK40 or the MK66 motors. 2.75 Inch Rocket Launcher procurement funding supports the launcher system to include resolution of obsolescence, safety, reliability, weapon integration activities, test sets, engineering changes, and production issues.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	1.911	1.901	2.201	-	2.201	2.348	2.492	2.541	3.112
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	1.911	1.901	2.201	-	2.201	2.348	2.492	2.541	3.112

Justification:

FY2020 base procurement dollars in the amount of \$2.201 million supports the procurement of 141 M261 19-tube analog launchers for the AH-64 Apache, H-60 Blackhawk, and Special Operation aircraft. Procurement replaces disposable launchers as a result of annual rocket firings for pre-deployment training, and replenishes the limited issuable stockage depleted below levels acceptable to support training of Active Army, Special Operations Forces and Reserve Components usage.

The demand for the M260 analog launchers has decreased due to the Aviation Restructure Initiative.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support		P-1 Line Item Number / Title: 9154A50100 / Launcher, 2.75 Rocket
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>"In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."</p>		

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

Appropriation / Budget Activity / Budget Sub Activity:
2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support

P-1 Line Item Number / Title:
9157J01200 / Launcher Guided Missile: Longbow Hellfire XM299

ID Code (A=Service Ready, B=Not Service Ready): **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>)	-	-	7	9	18	27	87	69	54	23	-	267
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	0.991	0.991	2.000	2.991	10.991	8.991	6.992	3.000	-	33.956
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	0.991	0.991	2.000	2.991	10.991	8.991	6.992	3.000	-	33.956
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	0.991	0.991	2.000	2.991	10.991	8.991	6.992	3.000	-	33.956

(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 Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	141.571	110.111	111.111	110.778	126.333	130.304	129.481	130.435	-	127.176

Description:

The Launchers and Test Sets Product Office is the executive procurement agent for all services and Foreign Military customers, for all variants of M299 Launchers. This budget line procures all M299 launchers in support of Army operational, training, and war reserve requirements. The M299 launchers are qualified to carry and fire the AGM-114 Family of Missiles and the Joint Air-Ground Missile. Each launcher contains: Launcher electronics assembly (LEA) that communicates with the aircraft via bus commands, provides missile launch sequencing, seeker type ID, missile "Hang fire/Misfire" determination, alternate laser code algorithm processing, and Alternating Current (AC) to Direct Current (DC) power conversion for supplying missile DC power; Wiring harnesses that provide electrical connection from LEA to missile rails (not interchangeable with M272 harnesses); Holdback latch that retains missiles on rails and Safe/Arm switch that mechanically interrupts the arm power going to the LEA. The weight of the M299 launcher (4-Rail Launcher) is approximately 114 pounds and the length of the M299 is approximately 66.3 inches. M299 Longbow HELLFIRE Launcher procurement funding supports the launcher system to include resolution of obsolescence, safety, reliability, weapon integration activities, test sets, engineering changes, and production issues.

Secondary Distribution	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024
Army	-	7	9	18	27	87	69	54	23
Total Obligation Authority	-	0.991	0.991	2.000	2.991	10.991	8.991	6.992	3.000
Total: Secondary Distribution	-	7	9	18	27	87	69	54	23
Total Obligation Authority	-	0.991	0.991	2.000	2.991	10.991	8.991	6.992	3.000

Justification:

FY 2020 base procurement dollars in the amount of \$0.991 million supports the procurement of 9 M299 launchers for the AH-64 Apache aircraft.

FY 2020 OCO procurement dollars in the amount of \$2.000 million supports the procurement of 18 M299 launchers for the MQ-1C Gray Eagle aircraft in order to replace and replenish launchers expended in wartime operations.

Note: P-1 OCO quantity is in error. P-40 OCO quantity justification is correct.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Army		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 30: Other Support		P-1 Line Item Number / Title: 9157J01200 / Launcher Guided Missile: Longbow Hellfire XM299
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.